Performance Analysis of an Experimental Field Project Utilizing Asphalt Modifiers

Final Report

Prepared by:

David R. Johnson
Principal Investigator

of the

Civil Engineering Department
Montana State University - Bozeman

Prepared for:

STATE of MONTANA
DEPARTMENT of TRANSPORTATION
RESEARCH, DEVELOPMENT, and TECHNOLOGY
TRANSFER PROGRAM
in cooperation with the
U.S. DEPARTMENT of TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

March, 1997

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
FHWA/MT - 96/8911		

4. Title and Subtitle	5. Report Date
Performance Analysis of an Field Experimental Project Utilizing Asphalt Modifiers	**March, 1997**
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
David R. Johnson	

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Department of Civil Engineering **205 Cobleigh Hall** **Montana State University** **Bozeman, Montana 59717**	11. Contract or Grant No. **MSU G&C # 291257** **MDT Project # 8911**

12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
Montana Department of Transportation **2701 Prospect** **Helena, Montana 59620-1001**	**Final** **Aug. 1989 - March 1997**
	14. Sponsoring Agency Code **5401**

15. Supplementary Notes

Research performed in cooperation with the Montana Department of Transportation and the U.S. Department Transportation, Federal Highway Administration.

16. Abstract

Utilization of a mix design that will resist rutting and cracking is crucial to the life expectancy of a pavement. Drainage problems associated with these distresses contribute to safety problems and accelerated pavement deterioration. In an effort to combat rutting and cracking in Montana, a series of experimental test sections utilizing polymer modifiers were installed in 1991 along the I-94 Prairie County Line West Project, in eastern Montana. These sections were to be monitored for a period of five years by Montana State University - Bozeman.

This report focuses on results of the five year monitoring of the polymer modified test sections. A summarization of the interim reports is included. The findings of this study indicate that utilization of polymer modifiers has quantifiable benefits. These benefits extend beyond improvements in resistance to rutting and cracking, and into resistance to raveling, weathering, and bleeding.

17. Key Words	18. Distribution Statement
Rutting, Cracking, Raveling, Weathering, Bleeding, Prophilograph, Kraton, Polybilt, Polymer Modifiers, Montana	**No restrictions. This document is available to the public through NTIS: Springfield, Virginia 22161**

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	**Unclassified**	**194**	

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

DISCLAIMER

The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of the Montana Department of Transportation or the Federal Highway Administration.

MDT attempts to provide reasonable accommodations for any known disability that may interfere with a person participating in any service, program, or activity of the Department. Alternative accessible formats will be provided upon request. For further information, call (406) 444-6269 or TDD No. (406) 444-7696.

ACKNOWLEDGMENTS

The author would like to extend his appreciation to the following individuals for their participation and aid in the successful completion of this project:

Robert Garber, Montana Department of Transportation - Research

Michael "Mick" Johnson, Montana Department of Transportation - Glendive

Dr. Murari Man Pradhan, Utah Department of Transportation

Dr. Joseph D. Armijo, Montana State University, Retired

Dr. John Mounce, Montana State University

Dr. Jerry Stephens, Montana State University

Dr. Ramzi Taha, Montana State University

Allen Aksamit, Randy Carroll, David Dust

A color copy of Appendix A may be obtained from the Montana Department of Transportation, Research, Development, and Technology Transfer Program for the cost of reproduction.

ABSTRACT

Utilization of a mix design that will resist rutting and cracking is crucial to the life expectancy of a pavement. Drainage problems associated with these distresses contribute to safety problems and accelerated pavement deterioration. In an effort to combat rutting and cracking in Montana, a series of experimental test sections utilizing polymer modifiers were installed in 1991 along the I-94 Prairie County Line West Project, in eastern Montana. These sections were to be monitored for a period of five years by Montana State University - Bozeman.

This report focuses on results of the five year monitoring of the polymer modified test sections. A summarization of the interim reports is included. The findings of this study indicate that utilization of polymer modifiers has quantifiable benefits. These benefits extend beyond improvements in resistance to rutting and cracking, and into resistance to raveling, weathering, and bleeding.

Table of Contents

List of Tables

List of Figures

List of Photographs:

INTRODUCTION

In pursuit of solutions to problems of rutting and cracking of asphalt pavements, the Montana Department of Transportation (MDT) contracted with the Department of Civil Engineering of Montana State University - Bozeman (MSU), in 1988, to investigate asphalt modifiers. Laboratory testing of 120/150 penetration grade samples from four Montana refineries, incorporating six separate commercial modifiers, were evaluated during the interval July 1, 1988, to April 1, 1989. A direct consequence of the positive results from the laboratory work, was the implementation of this field study. All of the modified asphalts, irrespective of utilized combination of modifier-asphalt, outperformed the unmodified asphalts tested. Two of those modifiers were selected for inclusion in the field study based on their performance in the lab study. Those modifiers were Kraton D4141G from Shell Chemical Company, and Exxon's Polybilt X-1. (*1*)

The objective of field study was to develop an implementation plan that could be used in establishing an experimental project, utilizing asphalt modifiers. The plan would provide detailed recommendations for construction of pavement test sections, emphasizing normal construction practices to the extent possible. The other objective of the implementation plan was to establish procedures for monitoring the project. Monitoring phases included a pre-construction, construction, original condition, and post-construction surveys at specified intervals for a period of five years. The fourth year evaluation was omitted as there appeared to be no change in pavement condition when compared to the third year evaluation.

The pre-construction pavement surface condition survey included the selection of the profilograph test stations, profilograph data collection at those stations, and pavement surface cracks surveys. A Rainhart Transverse Profilograph (Austin, TX) was used for the surveying and monitoring of the pavement.

Monitoring of construction activities consisted of recording of the production of modified asphalt, asphalt-aggregate mix temperatures, recording placement and rolling performance of the mix, and extensive photography of operations. Equipment utilization was noted, and any special deviations from normal paving operations were detailed, i.e. mixing requirements, lay-down temperatures, rolling effort and patterns.

Following construction, initial conditions were surveyed to determine pre-traffic rutting and surface conditions. While overall conditions were noted, rutting measurements were done at selected locations. String-line and leveling techniques were used at referenced transect locations. The number of transects were sufficient to adequately represent the condition of the test sections. Again photographs were utilized as well as established pavement management techniques for assessing surface conditions.

For a five year period after construction, monitoring of the experimental project was done at a fixed time each year, in the summer. Rutting measurements were taken at this time. A distress survey was also completed as part of the evaluation.

Test Section

A section of Interstate Highway I-94 was selected as the experimental test section and identified by Federal Aid Project No. IR 94-5(25)185, Plant Mix Overlay, Prairie County Line-West Prairie County. The total length of the project was 6.7 miles, one half in the eastbound lane and another half in the westbound lane. Each half section contains a section of Kraton D4141G modified asphalt, a control section, and a section of Polybilt X-1 modified asphalt. Asphalt type for the control, as found in Table 1, was selected by the contractor. Table 2 provides a detailed explanation of the layout of the MSU stations. It includes the MDT station number, modifier used, and direction of traffic.

Table 1: Station, Length, and Asphalt Binder on East and Westbound Lanes

Station	Length (feet)	Binder on Eastbound Lane	Binder on Westbound Lane
2126+92 to 2174+73	4781	Polybilt Modified Asphalt	Kraton Modified Asphalt
2174+73 to 2204+73	3000	85/100 Exxon Asphalt	85/100 Exxon Asphalt
2204+73 to 2264+25	5952	Kraton Modified Asphalt	Polybilt Modified Asphalt

Table 2: Station Layout.

MSU Stations	MDT Station	Westbound Binder	Eastbound Binder
1-52	2260+00	Polybilt	Kraton
2-51	2254+00	Polybilt	Kraton
3-50	2250+00	Polybilt	Kraton
4-49	2244+00	Polybilt	Kraton
5-48	2238+00	Polybilt	Kraton
6-47	2232+00	Polybilt	Kraton
7-46	2226+00	Polybilt	Kraton
8-45	2220+00	Polybilt	Kraton
9-44	2214+00	Polybilt	Kraton
10-43	2208+00	Polybilt	Kraton
11-42	2200+00	Exxon	Exxon
12-41	2196+00	Exxon	Exxon
13-40	2192+00	Exxon	Exxon
14-39	2188+00	Exxon	Exxon
15-38	2184+00	Exxon	Exxon
16-37	2180+00	Exxon	Exxon
17-36	2176+00	Exxon	Exxon
18-35	2170+00	Kraton	Polybilt
19-34	2164+00	Kraton	Polybilt
20-33	2160+00	Kraton	Polybilt
21-32	2154+00	Kraton	Polybilt
22-31	2150+00	Kraton	Polybilt
23-30	2144+00	Kraton	Polybilt
24-29	2138+00	Kraton	Polybilt
25-28	2134+00	Kraton	Polybilt
26-27	2130+00	Kraton	Polybilt

The test section is near Fallon, about twenty-seven miles west of Glendive. This region experiences diverse climatic conditions annually. The area exceeds 90° F an average of forty-four days annually. Monthly highs average 81.1° F, 89.4° F, and 88.5° F for June, July and August respectively. Daily lows fall below 0° F, an average of thirty-five days annually. Average lows in December, January and February are 21.4° F, 13.5° F, and 21.8° F, respectively. The annual precipitation is about ten inches. The elevation of the area is about 2200 feet (Glendive is 2076 feet). (*2*)

The average daily traffic (ADT) on this section of I-94 was 3128, 2820, 2490, 2470, 2210, and 2650 in the years from 1990 to 1995. Commercial vehicles numbered 628, 620, 649,

634, 610, and 749 over the same period. The total ADT consists of nearly twenty-five percent commercial vehicles. The percent of the ADT taken over the months of June, July, and August is about 135 percent of the ADT taken over the total year.(*3*)

The pavement surface in the test section exhibited visible rutting, cracking, and bleeding (Photo A - Appendix A). Most of the thermal transverse cracks ran the full width of the pavement. The crack maintenance was apparent from the sealed cracks (Photo B - Appendix A). The driving and passing lanes each displayed contrasting appearances. The driving lane was black from recent maintenance activities, including chip sealing and fine layer overlays to cover the ruts in the original pavement surface (Photo C - Appendix A). The surface was worn exposing coarse aggregates which were glossy in appearance and smooth to the touch. Most wheel paths on the driving lane were bleeding, and isolated patches of bleeding on the passing lane were noticed. During an observed rain, water ran in the ruts along the pavement surface in a longitudinal direction. In addition, some water pools were noticed on the pavement.

The test section consists of about three miles on the eastbound lane and about three miles on the westbound lane of Interstate Highway I-94. Table 1 shows the lengths and locations of the highway overlays and utilized binder within a section for both eastbound and westbound lanes. The detail of the layout of the test section and location of the test sections with different binders are shown in Figure 1.

The pavement overlay thickness consisted of 0.50 ft. of plant mix bituminous base and 0.20 ft. of plant mix bituminous surface (PMBS). Twenty hundredths of the driving lane was trenched by a cold milling machine and was back filled with the respective PMBS as the overlay material. A final overlay of 0.35 ft. PMBS was then placed in two lifts. Figure 2 shows the typical cross section of the pavement.

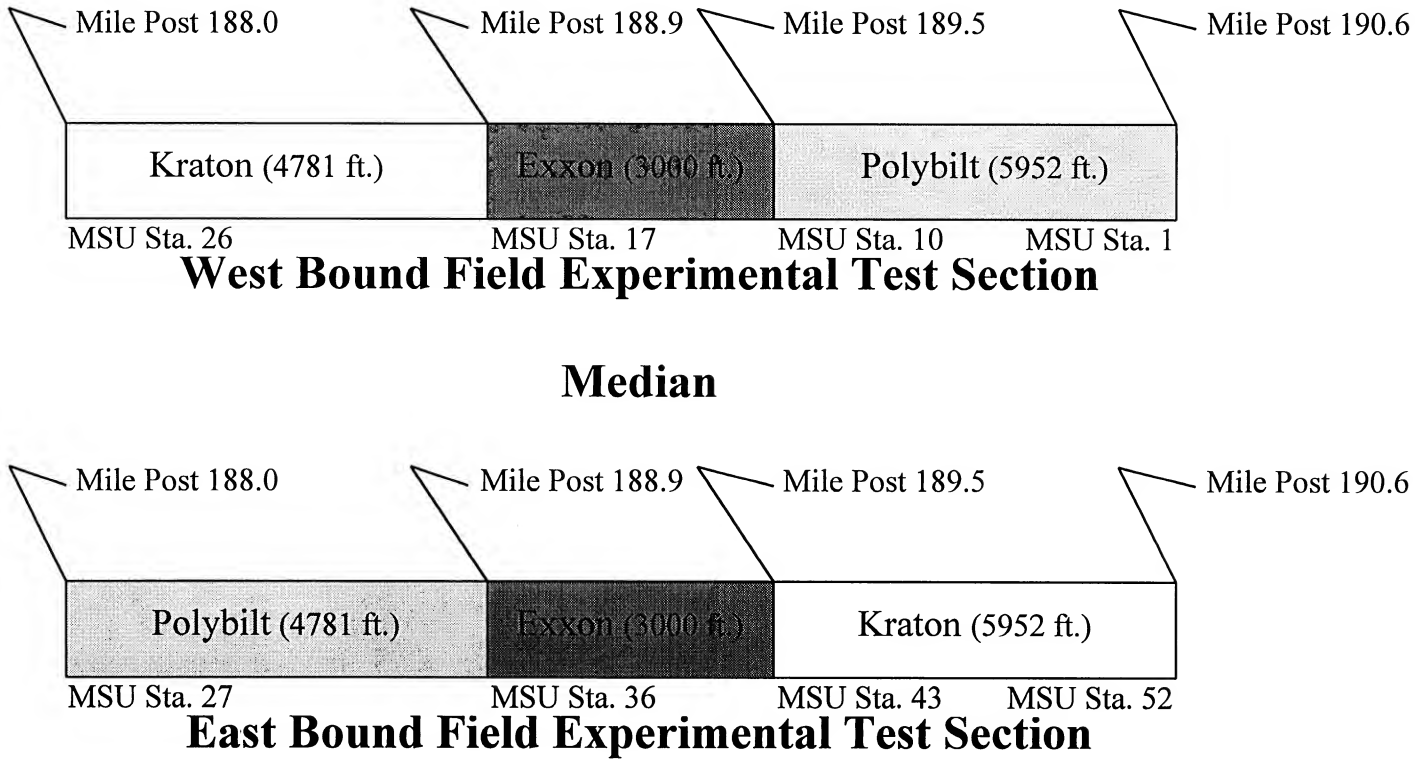


Figure 1. Layout of Test Sections - Interstate Highway I-94.

STATE	PROJECT NUMBER	SHEET NO.
MONTANA	IR 94-5(25)185	3

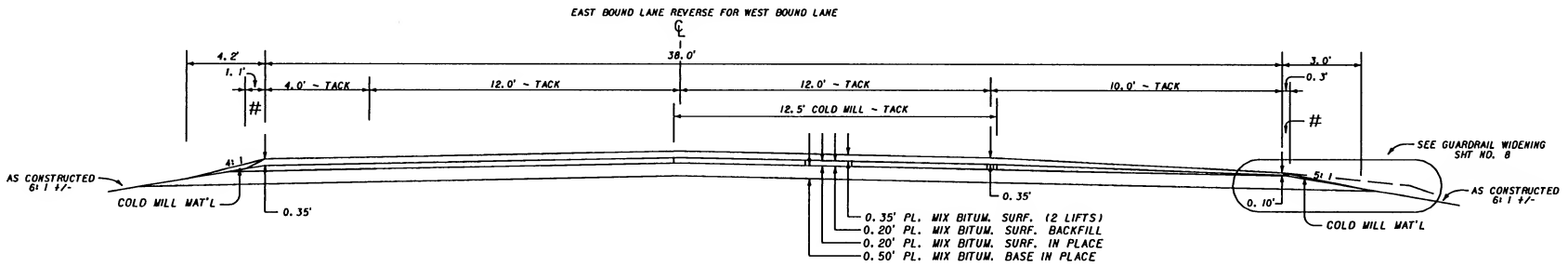
LINEAR AND LEVEL DATA

LENGTH OF ROADWAY IR 94-5(25)185	34,177.85 FEET	= 6.473 MILES
LENGTH OF BRIDGES IR 94-5(25)185	1,398.95 FEET	= 0.265 MILES
TOTAL LENGTH OF IR 94-5(25)185	35,576.80 FEET	= 6.738 MILES

BEARING SOURCE
TAKEN FROM PROJECT: I - IG 94-5(14)181

TYPICAL SECTION NO. 1

STA. 1940+00.0 TO STA. 2294+22.0



TEMPORARY 2:1 INSLOPE

NOTE: SEE SURFACING FRAME AND STRAIGHT LINE DETAIL FOR MODIFIED ASPHALT LOCATIONS

QUANTITIES

UNIT	GRAVEL				UNIT	BITUMINOUS MATERIAL					
		PLANT MIX OVERLAY	PLANT MIX BACKFILL	△ COLD MILL MAT'L		TACK	PL. MIX OVERLAY QR.	PL. MIX BACKFILL QR.			
AREA SQUARE FEET		12.3	2.5	1.4	AREA SQUARE YARDS	983.3					
CU. YARDS PER STATION		45.6	9.3	5.2	TONS PER STATION		5.27	1.07			
TONS PER STATION		87.9	17.9	10.0	GALLONS PER STATION	49.2					

△ QUANTITY DOUBLED FOR INSLOPES

Figure 2. Typical Cross Section of Interstate Highway I-94 Pavement

PRE-CONSTRUCTION PAVEMENT SURFACE CONDITION

Both transverse and longitudinal cracks were studied with reference to the MSU stations. The distance of the closest crack, both ahead and behind the MSU stations, were measured and recorded. The severity levels of the cracks were classified according to the Strategic Highway Research Project's (SHRP) Distress Identification Manual for the Long Term Pavement Performance Project. (*4*) The longitudinal cracks found in the vicinity of the station were also classified according to the manual. Typical transverse and longitudinal cracks are shown in Photo D and Photo E (Appendix A). Photos of every crack were taken for record.

Rut Depth

Rutting is described in the Distress Identification Manual as longitudinal surface depressions in the wheel path. Severity levels can be defined in relation to inches of rut depth. Rut depths are measured in inches to the nearest 1/10-inch at set stations.(*4*) For the field study, fifty-two stations were chosen randomly at differences ranging from 200 to 600 feet as seen in Table 2.

The maximum rut depths at each station's wheel paths for the westbound driving and passing lanes were measured from the transverse profilograph record provided by the Rainhart Profilograph. It was observed that the rut depth on the driving lane was greater than that in the passing lane, even though the driving lane had undergone several maintenance activities to fill the ruts on the original pavement surface. The average rut depths on the left and right wheel paths were 0.26 and 0.18 inches for the passing lane, and 0.31 and 0.29 inches for the driving lane. The maximum rut depths on left and right wheel paths were 0.45 and 0.55 inches for the driving lane, and were 0.55 and 0.45 inches for the passing lane.

Similarly, the rut depths of the pre-construction pavement on the eastbound driving and passing lanes were obtained from the profilograph output. Again, the rut depths on the driving lane were higher than those on the passing lane even though the eastbound driving lane had been subjected to overlays and chip seals to reduce the rutting on the original pavement surface too. The average rut depths on the left and right wheel path of passing lane were 0.20 and 0.12 inches, with the maximum rut depth of 0.30 and 0.20 inches, respectively. The average rut depths on the left and right wheel path of driving lanes were 0.39 inches for both wheel paths with maximum

rut depths of 0.60 and 0.70 inches for the respective wheel paths. A summary of the pre-construction rutting is found in Table 3.

Table 3: Pre-Construction Rutting.

Direction	**Driving Lane**		**Passing Lane**	
	LWP	RWP	LWP	RWP
	(Inches)	(Inches)	(Inches)	(Inches)
Westbound Average Depths	0.31	0.29	0.26	0.18
Maximum	0.45	0.55	0.55	0.45
Standard Deviation	0.12	0.08	0.07	0.10
Eastbound Average Depths	0.39	0.39	0.20	0.12
Maximum	0.60	0.70	0.30	0.20
Standard Deviation	0.12	0.16	0.04	0.03

Transverse Pavement Profile

The profilograph records illustrate the actual profile of the pavement surface with reference to the straight profilograph beam. The output of the profilograph was reproduced by taking the coordinates of the profile at intervals of four inches. The results of the differential leveling survey gave the elevation of the profilograph legs positions. Survey results and profiles are found in Appendix D.

The transverse slope of the pavement was no longer in the original intended shape. The distortions were so excessive that the intended drainage of the pavement was no longer possible. This would affect the stability of vehicles and reduce the performance of the pavement. The distortion of the driving lanes was more extensive than that of the passing lanes.

OVERLAY CONSTRUCTION

The specifications and requirements of the construction of the overlay on the experimental test section, using the modified binders, were stipulated in the special provisions section of the contract document. An overview of the materials used is given in the following sections.

Aggregates

Plant mix surfacing grade B (3/4-inch maximum size aggregate) was used throughout the experimental test section. The source of the aggregate was the Denby pit, which is Yellowstone River gravel. The aggregate gradation for the job mix including the high and low range of gradation are shown in Table 4. The required mix gradation was obtained by mixing two stock piles of crushed rock and one pile of natural fines. The bin split percentages used to obtain the job mix specification are shown in Table 5. The field aggregate gradation was monitored constantly by running wet and dry sieve analysis to assure that the mix gradation met the specification. These quality control tests were conducted by the MDT.

Table 4: Aggregate Gradations for Grade B PMBS

Sieve Size	Job Mix	Range	
	Percent	Low	High
3/4-inch	100	100	100
1/2-inch	88	81	95
3/8-inch	77	70	84
4M	53	46	60
10M	34	28	40
40M	17	12	22
200M	6.5	5	8

Table 5: Bin Split Percentages

	Coarse Percent	Course Fines Percent	Natural Fines Percent
Design	43	37	20
Field	42	37	21

Asphalt

The 85/100 penetration grade asphalt from Exxon Company, USA, Billings, as selected by the contractor, was used in the control section. Kraton and Polybilt modifiers were recommended based on the laboratory study on 120/150 penetration grade of base asphalt. This was the grade of asphalt used in the MSU laboratory study and recommended for the field evaluation. However, the Polybilt modified asphalt utilized Exxon 85/100 penetration grade asphalt and a softening agent as the base in the experimental test section; this modified asphalt was designated as Polybilt X-1. The base asphalt for the Kraton modified asphalt section was 120/150 penetration grade asphalt from Exxon.

Kraton

Kraton thermoplastic rubber polymers are in a unique class of rubber designed for use without vulcanization, the combining of sulfur with other additives in the presence of heat and pressure so as to increase its strength and resiliency. Kraton D4141G is a linear SBS (Styrene-Butadiene-Styrene) block copolymer. Kraton D4141G differs fundamentally in molecular structure from the typical plastic or commercial rubber (homopolymer or random copolymers); it is a tri-block copolymer with an elastic block in the center and a thermoplastic block on each end. The first "4" identifies the polymer as containing process oil usually a napthenic/paraffinic type which is added to the polymer to aid in the mixing of the polymer into bitumen, and to affect desirable changes in the physical properties of the final binder blend. Kraton D4141G contains about twenty-nine percent oil. The designation "G" refers to the polymer being in the ground "powder" form, again for the purpose of decreasing blending time.(*2*)

Polybilt

Polybilt is an ethylene vinyl acetate, EVA, resin and encompasses a large family of petrochemical polymers and polymer concentrates designed for asphalt modification by Exxon Chemical Company. Polybilt X-1 was used with 120/150 penetration grade asphalt for the MSU laboratory study, and was recommended for inclusion in the field study. However, an EVA polymer modified concentration, mixed in Houston, Texas, was used and mixed with 85/100

penetration grade Exxon at the Exxon Company, USA, Billings. Exxon Chemical chose to use the 85/100 penetration grade asphalt, with "softeners," to attain the desired specifications. (*2*)

Placement of Overlays

The placement of the overlays started on April 24, 1991. The day was warm and breezy with an ambient temperature of 78° F. Both the modifiers, Polybilt and Kraton, were mixed in Billings. The modified asphalts were then trucked by tanker to the job site, a distance of approximately 200 miles. The Polybilt concentrate was blended with 85/100 penetration grade Exxon asphalt at 350° F in a 5000 gallon tank with an agitator at the Exxon Company, Billings. The Kraton D4141G polymer granules were mixed with 120/150 penetration grade of Exxon asphalt at a private asphalt mixing company in Billings. The modifier mixed asphalts were delivered to the site on time without interrupting the paving schedule.

The Polybilt modified asphalt was brought to the site in an 8900 gallon insulated tanker, with an in-tank asphalt temperature of 350° F. The modified asphalt was then transferred to the drained stationary insulated tank of a drum-type continuous bituminous mix plant, and pumped into the continuous flow mixing plant. The average output of the plant was 407 tons/hr. The plant mix bituminous material was carried in belly dump trucks to the paver. Similar operations were repeated for the Kraton modified asphalt delivered in about a 9000 gallon insulated tanker. The modified asphalt temperatures in the tank were 320° F for the first tank and 344° F for the second tank. Unfortunately no record of the tanker or its temperature was located for the unmodified control.

Prior to placing the PMBS and leveling courses, the existing 0.20 ft. of bituminous surfacing on the driving lane was removed by a cold milling machine (Photo F - Appendix A). The bituminous surfacing, removed from all cold milled sections, was replaced with PMBS the same day that the milling was done. A tack coat of SS-1 emulsified asphalt was applied to a 79° F surface prior to the placement of PMBS in the trench. The PMBS was placed with numbers of dump trucks leaving a windrow of PMBS closely followed by a paver. The paver used in the operation was a Blow Knox NE 85 1B PI1804 paver with a capacity of 750 Tons/hr. The lay down temperature ranged from 238-259° F. The paver was closely followed by two 18-ton Dynapak vibrating rollers. Two passes were made to compact seams followed by four more

passes. The break down roller-compacted mat was thus produced with the total of six passes of vibrating rollers. The rolling operation was completed with the final pass of a 10-ton finishing steel roller. Identical processes were repeated for placement of asphalt and unmodified asphalt in the control section. No difficulties were noticed in the placement of the PMBS with modified asphalt or the unmodified control section. The daily average of the data collected on the placement of the PMBS are presented in a tabulated form by date, section, temperature, tonnage placed, and binder type in Table 6.

Table 6: Placement Data Surface-Grade B Asphalt Concrete

Date	Station (From)	Distance (Feet)	Asphalt Modifier	Tonnage Placed	Temp. Mix (F)	Asphalt Percent	Asphalt Temp. (F)	Loads of Mix
4/24	2126+92	4756	Polybilt	830.65	325	5.63	348	35
4/24	2174+49	3025	Exxon	517.28	303	5.73	295-306	22
4/24	2204+73	5952	Kraton	1099.74	308	6.04	348	46
4/25	2264+25	5975	Polybilt	1079.56	300	5.34	352	45
5/1	2202+03	2730	Exxon	506.20	302	5.65	295-306	21
5/1	2174+73	4781	Kraton	857.01	305	5.50	333	38
5/6	2126+22	4851	Polybilt	1025.18	325	5.39	344	38
5/6	2174+73	3000	Exxon	626.20	308	5.71	295-306	27
5/6	2204+73	5952	Kraton	1246.61	305	5.51	330	54
5/7	2126+47	4826	Polybilt	949.66	325	5.51	344	39
5/7	2174+73	3000	Exxon	600.13	310	5.71	295-306	27
5/7	2204+73	5952	Kraton	1174.40	305	5.68	340	54
5/8	2264+25	5952	Polybilt	1219.38	322	5.50	360	49
5/8	2204.73	3000	Exxon	623.37	312	6.00	295-306	27
5/8	2174+73	4781	Kraton	996.87	305	5.60	340	42
5/8	2264+25	5952	Polybilt	1179.60	322	5.50	356	48
5/9	2204+73	3000	Exxon	597.69	307	5.76	295-306	24
5/9	2174+73	4781	Kraton	945.55	305	5.60	332	52
5/9	2126+92	4781	Polybilt	1227.49	320	5.53	351	50
5/10	2174+73	3000	Exxon	809.47	304	5.76	295-306	34
5/10	2204+73	5918	Kraton	1597.85	304	5.57	345	64
5/14	2126+62	4811	Polybilt	1049.59	323	5.52	338	42
5/14	2174.73	3000	Exxon	646.08	308	5.76	295-306	26
5/14	2204+73	5952	Kraton	1273.22	303	5.55	334	51
5/16	2264+25	5952	Polybilt	1616.98	323	5.50	338	65
5/16	2204+73	3000	Exxon	842.00	312	5.85	295-306	36
5/16	2174+73	4781	Kraton	1282.14	302	5.60	343	52
5/17	2264+25	5952	Polybilt	1262.51	321	5.55	331	51
5/17	2204+73	3000	Exxon	623.70	307	5.71	295-306	25
5/17	2174+73	4781	Kraton	1022.85	304	5.66	348	42

The average, maximum, and minimum temperatures were 320.6, 325, and 300° F for the Polybilt X-1 modified PMBS; 304.6, 308, and 302° F for Kraton D4141G modified PMBS, and 307.3, 312 and 302° F for unmodified 85/100 Exxon PMBS. The average binder temperature of Polybilt modified asphalt was the highest at 346.2° F compared to 339.3° F for Kraton modified asphalt and 300.6° F for unmodified Exxon asphalt. Average asphalt percentages of the PMBS were 5.50 for Polybilt modified asphalt, 5.63 for Kraton modified asphalt, and 5.76 for unmodified asphalt.

FIELD TESTING

Quality control data, utilizing 50 blow Marshall specimens, collected by MDT-Glendive District, reveals the following information. The average, maximum, and minimum values of Marshall stability were 2136, 2226, and 2003 pounds for Polybilt X-1 modified asphalt; 2008, 2151, and 1647 pounds for Kraton modified asphalt; and 2068, 2259, and 1851 pounds for unmodified Exxon asphalt. The stability of the Polybilt modified asphalt was higher than both the Kraton modified and unmodified asphalt. The minimum stability of the Kraton modified asphalt was lower than specifications. The variations between the maximum and minimum stability of the Kraton modified and unmodified asphalt were the highest. The average percent air voids of 3.34 percent for Kraton modified asphalt was the highest. The Polybilt modified asphalt had 2.77 percent air voids and the unmodified Exxon asphalt had 2.90 percent. The average Marshall flow values varied between 10 and 11 1/100 inches. The average unit weight had a range of 2.339 and 2.355 g/cc, which was higher than design specification.

The field densities of the compacted mat at each section were measured using a nuclear densimeter. Four readings were taken at each location. The average densities measured by the nuclear densimeter were compared with the densities of the laboratory test specimens prepared with the respective plant mix of aggregate and binder using 50 compaction blows with a Marshall hammer. None of the test results of the pavement were less than 95 percent of target density. In fact, some of them were between 97 and 98 percent. Table 7 presents a summary of the gathered field testing.

Table 7: Field Data

Material	**Stability** (Pounds)	**Air Voids** (Percent)	**Flow** ($1/100^{th}$ inch)	**Unit Weight** (gm/cc)	**Asphalt Content** (Percent)
AC 85/100 Exxon (Ave.)	2068	2.90	10.10	2.354	5.76
Maximum	2259	3.30	11.00	2.361	6.00
Minimum	1851	2.40	9.00	2.349	5.65
Design Specification	1615	3.30	9.00	2.325	5.90
Kraton D4141G (Ave.)	2008	3.34	11.00	2.339	5.63
Maximum	2151	4.30	12.00	2.350	6.04
Minimum	1647	1.70	10.00	2.327	5.50
Design Specification	1725	3.50	11.00	2.315	6.00
Polybilt X-1 (Ave.)	2136	2.77	10.10	2.355	5.50
Maximum	2226	4.30	11.00	2.362	5.63
Minimum	2003	2.00	9.00	2.332	5.34
Design Specification	1620	3.50	8.00	2.319	5.60

Core Density and Percent Air Voids

The cores of the pavement were taken on May 23, and May 24, 1991 from eastbound and westbound lanes. Unfortunately, the only unmodified cores came from the passing lane. These were also the only cores from the passing lane. The data on the cores was provided by MDT-Glendive District. The lifts were separated from each other, and bulk specific gravity and Rice specific gravity were run on each lift. This was done to increase the accuracy of the in-place percent air voids determinations. The average percent air voids ranged between 3.2 percent for Polybilt modified asphalt to 4.5 percent for the unmodified asphalt control section. However, the ranges of percent air voids of cores from all three sections were large. The maximum percent air voids was 6.8 percent for Kraton modified pavement, 5.4 percent for unmodified asphalt, and 5.2 percent for Polybilt modified section. Similarly, the minimum percent air voids for Kraton modified section was the lowest at 1.8 percent compared to that of Polybilt modified section at 1.9 percent and unmodified control section at 3.5 percent. The most consistent product, in terms of air voids, was the unmodified Exxon 85/100 penetration grade asphalt form the control section.

COST INFORMATION

The costs of the modified asphalt and the plant mix were bid as found in Table 8. Table 8 also includes current, January through June 1996, average bid information for both modified and unmodified asphalt concrete.

Table 8: Bid Information

Material	Cost Bid
AC 85/100 Exxon (unmodified)	$126.20/Ton
Kraton D4141G modified 120/150 Exxon	$376.20/Ton
Polybilt X-1 modified 85/100 Exxon	$239.20/Ton
Plant mix	$9.20/Ton
Asphalt cement 85/100 (1996)	$115.63/Ton
Asphalt cement polymer modified (1996)	$208.01/Ton

The material costs for each binder/aggregate combination can be determined from the placement data and bid prices. By breaking the placement values into their respective asphalt cement and plant mix quantities, and then summing these values, the amount placed of each is determined. Multiplying the bid amounts by their respective quantities placed yields the costs. If the total cost of material is then divided by the number of miles utilizing a material, the cost per mile is produced.

For the Polybilt modified sections a total of 628.78 tons of asphalt cement was placed with 10,811.82 tons of plant mix. At $239.20/ton for the asphalt and $9.20 for the plant mix, the cost is $249,872.92. The total length of the Polybilt sections is 2.03 miles, resulting in a cost of $120,909.11/mile. Utilizing the same procedure for the Kraton and control sections yields a cost per mile of $169,112.79 and $89,437.08 respectively. Table 9 provides a summary of the in-place material costs.

Table 9: In-place Material Costs

Material	Asphalt Cement (Tons)	Plant Mix (Tons)	Cost	Miles	Cost/Mile
Polybilt X-1	628.78	10811.82	$249,872.92	2.03	$120,090.11
Kraton D4141G	647.08	10855.16	$343,298.97	2.03	$169,112.79
85/100 Exxon	368.81	6023.31	$101,958.27	1.14	$89,437.08

POST-CONSTRUCTION EVALUATION

The post-construction pavement surface survey was conducted on May 31 and June 1, 1991. There were no cracks on the freshly laid pavement overlays. The pavement surface was smooth and black with closely held aggregates (Photo G - Appendix A) in all three test sections. There was no visible bleeding, rutting, or any other distress.

The transverse profiles of the post-construction pavement were taken about fifteen days after construction. The transverse profile records of the post-construction pavement surface were obtained by running the Rainhart transverse profilograph at the same stations as before.

The rut depths, as defined in the distress identification manual, were measured on the left and right wheel paths of each passing and driving lane. The rut depths were measured from the records of the profilograph. The average rut depths for Polybilt on the left and right wheel paths of the westbound passing lane were 0.04 inches, for both, with a maximum depth of 0.10 and 0.05 inches, and a standard deviation of 0.04 and 0.02 inches, respectively. The average rut depths for Kraton on left and right wheel paths of the passing westbound lanes were 0.03 and 0.07 inches, respectively, with the maximum depth of 0.05 and 0.15 inches, and a standard deviation of 0.03 and 0.04 inches, respectively. The average rut depths on the left and right wheel paths of the passing lane were 0.06 and 0.09 inches, respectively, for the westbound control section, with a maximum rut depths of 0.10 and 0.15 inches and a standard deviation of 0.02 and 0.05 inches, respectively. The driving lane rut depths for Polybilt averaged 0.04 and 0.03 inches for the left and right wheel paths, respectively. Maximum depths were 0.05 inches for both, and a standard deviation of 0.02 and 0.03 inches, respectively. Kraton had left and right wheel path depths of 0.02 and 0.01 inches, respectively, for the westbound driving lane. The maximum depths were again 0.05 inches, and the standard deviations were 0.03 and 0.02 inches, respectively. The control section's rut depths for its left and right wheel paths, on the westbound driving lane, were 0.08 and 0.06 inches, respectively. The maximum depths were 0.10 inches for both, and the standard deviations were 0.03 and 0.02 inches, respectively. A summary of the westbound post-construction rut depths con be found in Table 10.

Table 10: Post-Construction Rutting - Westbound

	Driving Lane		**Passing Lane**	
	LWP (Inches)	RWP (Inches)	LWP (Inches)	RWP (Inches)
Polybilt				
Average Depths	0.04	0.03	0.04	0.04
Maximum	0.05	0.05	0.10	0.05
Standard Deviation	0.02	0.03	0.04	0.02
Kraton				
Average Depths	0.02	0.01	0.03	0.07
Maximum	0.05	0.05	0.05	0.15
Standard Deviation	0.03	0.02	0.03	0.04
Control				
Average Depths	0.08	0.06	0.06	0.09
Maximum	0.10	0.10	0.10	0.15
Standard Deviation	0.03	0.02	0.02	0.05

Data for the eastbound post-construction rut depths were similar to the westbound data. The average rut depths for Polybilt on the left and right wheel paths of the eastbound passing lane were 0.03 and 0.08 inches, respectively, with a maximum depth of 0.05 and 0.10 inches, respectively, and a standard deviation of 0.03 inches for both. The average rut depths for Kraton on left and right wheel paths of the eastbound passing lanes were 0.04 and 0.07 inches, respectively, with the maximum depth of 0.05 and 0.10 inches, and a standard deviation of 0.02 and 0.03 inches, respectively. The average rut depths on the left and right passing lane were 0.04 and 0.09 inches, respectively, for the eastbound control section, with a maximum rut depths of 0.05 and 0.10 inches, respectively, and a standard deviation of 0.02 inches, for both. The driving lane rut depths for Polybilt averaged 0.00 and 0.02 inches for the left and right wheel paths, respectively. Maximum depths were 0.00 and 0.10 inches, and a standard deviation of 0.00 and 0.04 inches, respectively. Kraton had left and right wheel path depths of 0.01 inches for both in the eastbound driving lane. The maximum depths were 0.05 inches, and the standard deviations were 0.02 inches, for both. The control section's rut depths for its left and right wheel paths, on the eastbound driving lane, were 0.04 and 0.03 inches, respectively. The maximum depths were 0.10 and 0.05 inches, respectively, and the standard deviations were 0.03 inches for both. In

each case the passing lane ruts were deeper than those of the driving lane. A summary of the eastbound post-construction rut depths can be found in Table 11.

Table 11: Post-Construction Rutting - Eastbound

	Driving Lane		**Passing Lane**	
	LWP	RWP	LWP	RWP
	(Inches)	(Inches)	(Inches)	(Inches)
Polybilt				
Average Depths	0.00	0.02	0.03	0.08
Maximum	0.00	0.10	0.05	0.10
Standard Deviation	0.00	0.04	0.03	0.03
Kraton				
Average Depths	0.01	0.01	0.04	0.07
Maximum	0.05	0.05	0.05	0.10
Standard Deviation	0.02	0.02	0.02	0.03
Control				
Average Depths	0.04	0.03	0.04	0.09
Maximum	0.10	0.05	0.05	0.10
Standard Deviation	0.03	0.03	0.02	0.02

Transverse Pavement Profile

The first lift over those cracks with crack sealer caused a swelling phenomena of the PMBS after the break down rolling. These observations were made in all sections of untrenched pavement, with or without modified asphalt. The swelled materials were scraped off prior to the placement of the second lift. Also, down time of the continuous drum type mixing plant occurred when ever the asphalt was changed from unmodified 85/100 Exxon to one of the modified asphalts or vice versa. Emptying the asphalt tank of the continuous drum mix plant to the storage tank and refilling the asphalt tank with appropriate asphalt caused a minor time loss. This obviously would not be a concern in an ordinary paving operation having one material on each lift.

FIRST ANNUAL EVALUATION

The first annual field evaluation took place August 11, through August 13, 1992, about eighteen months after completion of construction. The pavement was in good condition overall. No cracks had formed during the first winter. Observed distresses included rutting (Photo H-Appendix A), raveling (Photo I - Appendix A), bleeding (Photo J - Appendix A), and polished aggregate (Photo K - Appendix A).

Rutting

The average rut depths of the westbound driving lane's control section were over three times the average rut depth of the Polybilt and Kraton modified asphalt sections. The rut depths of the westbound driving lane control section had nearly reached the level of pre-construction rutting in just over one year. The rut depths of the passing lane control section were also higher than those of the modified sections. The difference, however, was not as great as in the driving lane, 0.03 to 0.04 inches deeper.

Three distinct rutting patterns were observed from the data for each section. It was also observed that the rut depths on the driving lane were greater than in the passing lane. The average rut depths on the left and right wheel paths of the westbound passing lane were 0.06 and 0.07 inches for the Polybilt modified section, 0.11 and 0.10 inches for the control section, and 0.06 inches for both in the Kraton modified section. The maximum rut depths on the westbound passing lane left and right wheel paths were 0.09 and 0.10 inches for the Polybilt, 0.10 inches for both in the Kraton modified sections, and 0.13 and 0.18 inches for the control section. Standard deviations were 0.02 inches for both Polybilt wheel paths, 0.02 and 0.04 for the control section, and 0.03 inches for both for Kraton. The average rut depths of left and right wheel paths of the westbound driving lane were both 0.12 inches for Polybilt modified section, 0.37 and 0.38 inches for the control section, and 0.11 and 0.09 inches for Kraton modified section. The maximum rut depth of the westbound driving lane's left and right wheel paths were 0.16 and 0.17 inches for Polybilt section and 0.12 and 0.16 inches for the Kraton section, and 0.40 and 0.43 inches for control section. The standard deviation 0.02 and 0.03 inches for Polybilt, 0.04 and 0.06 inches for the control section, and 0.01 and 0.02 inches for Kraton. Table 12 gives a summary of this data.

Table 12: First Annual Post-Construction Rutting - Westbound

	Driving Lane		**Passing Lane**	
	LWP (Inches)	RWP (Inches)	LWP (Inches)	RWP (Inches)
Polybilt				
Average Depths	0.12	0.12	0.06	0.07
Maximum	0.16	0.17	0.09	0.10
Standard Deviation	0.02	0.03	0.02	0.02
Kraton				
Average Depths	0.11	0.09	0.06	0.06
Maximum	0.12	0.16	0.10	0.10
Standard Deviation	0.01	0.02	0.03	0.03
Control				
Average Depths	0.37	0.38	0.11	0.10
Maximum	0.40	0.43	0.13	0.18
Standard Deviation	0.04	0.06	0.02	0.04

The rut depths on the eastbound driving lane's control section were also about three times those on the Polybilt and Kraton modified sections. The rut depths on the pavement surface of the eastbound lane control section were almost equal to those on the pre-construction pavement surface. The differences in rut depths on the passing lanes of both Polybilt and Kraton modified and control sections were small.

Similarly, the rut depths on the eastbound driving and passing lanes were obtained from the profilograph records. The average rut depths on the left and right wheel path of eastbound passing lane were 0.06 and 0.10 inches for the Polybilt modified section, 0.06 and 0.09 inches for the control section, and 0.03 and 0.08 inches for the Kraton modified section. The maximum rut depth on the eastbound passing lane's left and right wheel paths were 0.08 and 0.16 inches for Polybilt modified section, 0.10 and 0.13 inches for the control section, and 0.08 and 0.12 inches for Kraton modified sections. Standard deviations were 0.02 and 0.03 inches for Polybilt and Kraton, 0.03 inches for both in the control section's wheel paths. The average rut depths on the pavement surface of left and right wheel paths of eastbound driving lanes were 0.12 and 0.13 inches for the Polybilt modified section, 0.35 and 0.39 inches for the control section, and 0.12 and 0.13 for the Kraton modified section. The maximum rut depths of the left and right wheel paths in the eastbound driving lane were 0.15 and 0.20 inches for the Polybilt modified section,

0.48 and 0.50 inches for the control section, and 0.15 inches for both in the Kraton modified section. Standard deviations were 0.02 and 0.03 inches for Polybilt, 0.10 inches for both in the control section, and 0.02 inches for both Kraton paths. Table 13 shows a summary of the eastbound data.

Table 13: First Annual Post-Construction Rutting - Eastbound

	Driving Lane		**Passing Lane**	
	LWP (Inches)	RWP (Inches)	LWP (Inches)	RWP (Inches)
Polybilt				
Average Depths	0.12	0.13	0.06	0.10
Maximum	0.15	0.20	0.08	0.16
Standard Deviation	0.02	0.03	0.02	0.03
Kraton				
Average Depths	0.12	0.13	0.03	0.08
Maximum	0.15	0.15	0.08	0.12
Standard Deviation	0.02	0.02	0.02	0.03
Control				
Average Depths	0.35	0.39	0.06	0.09
Maximum	0.48	0.50	0.10	0.13
Standard Deviation	0.10	0.10	0.03	0.03

Transverse Pavement Profile

The pavement profiles of the control section were already distorted because of the excessive rutting. The transverse slope of the pavement was no longer in the original intended shape. This would again affect the stability of the traffic and reduce the performance of the pavement. The distortion of the driving lanes was more extensive compared to that of the passing lanes.

SECOND ANNUAL EVALUATION

The second annual field evaluation was conducted June 24, through June 28, 1993. This was a little over two years following construction. The rut depths of the second annual pavement seemed to have stabilized. They were not significantly different from the first annual rut depths. While the wheel path bleeding of the control section was greater than that of first annual pavement, the globules of the polymer modified asphalt in the modified section did not change. Isolated spots of the polished aggregates and raveling were again noticed, but their severity levels were consistent with those from the first annual pavement.

The Marshall test properties of the cores from different phases, pre-construction, post-construction, and first annual pavement surveys indicated that only one of the Marshall test properties, air voids, correlates inversely with the rut depths. This has been indicated by the air voids and rut depths of modified sections and control section of the first annual pavement, pre-construction, and post-construction pavement cores.

Pavement Surface Condition

The distresses observed in the second year on the test section were transverse cracks, spot bleeding, rutting, polished aggregate, raveling, and weathering. The distress levels were different in the modified asphalt and the control sections. The raveling and weathering of the pavement surface of the second annual study were similar to that of the first annual survey (Photo L - Appendix A). Spots of polished (exposed) aggregate were again observed in all three sections (Photo M - Appendix A). The globules of the polymer modifier that had separated during the construction were still visible at previous levels (Photo N - Appendix A). However, the spot bleeding on the wheel path of the control section had increased in numbers and size (Photo O - Appendix A). The transverse cracks and ruts were measured at each station.

Transverse cracks

The major distress observed in the second annual pavement was thermal transverse cracking (Photo P - Appendix A). The transverse cracks were in the development stage, with both low and moderate observed severity levels. Most of these cracks were reflective (Photo Q - Appendix A), as seen from the location of the pre-construction cracks. The reason for the cracks,

with not a single transverse crack in the first annual pavement evaluation to extensive cracking in the second annual pavement evaluation, was the severe 1993 winter. Several days were below minus 20° F in 1993. Strategic Highway Research Project tests, direct tension and bending beam rheometer, on the modified asphalt in the Rocky Mountain User and Producer Group Truck predicted thermal cracking in this temperature range. Both the direct tension test, tensile failure properties of asphalt cement binder at low in-service temperatures, and the bending beam rheometer, low temperature creep response of asphalt binder, failed before reaching -20° F. While the riding quality of the pavement is not reduced by the these cracks, drainage related maintenance problems could develop.

In the first post-construction winter, climatological data recorded minimum temperatures of -10° F for two days in December, 1991, and -15° F for one day in January, 1992. While in the second winter, the climatological data recorded the minimum temperature of -30° F for one day in December, 1992, and below -20° F for five days in January, 1993, with one day of -28° F. The temperatures records were taken for the Mildred 5 N station, which is in Prairie county and is closest to pavement location. The severe winter temperatures resulted in thermal cracks on both modified and control sections. The phenomenon of thermal cracking was verified by results of performance based SHRP tests on both modified and unmodified asphalt. (*5*)

The transverse cracks were studied with reference to the fixed MSU stations. The number of cracks within 160 feet of the stations were recorded. The distance of the cracks both ahead and behind the stations were measured. All of the cracks were classified as low or moderate severity, as directed by the SHRP Distress Manual, and were at different stages of formation. Most of the cracks originated from the shoulders and passing lane, which were not trenched before construction. These cracks propagated to the driving lanes. The overlays were placed over the cracks of the shoulders and the passing lane of the pre-construction pavement. The pre-construction driving lane was trenched 0.20 feet prior to the placement of the overlays, essentially removing the original transverse cracks. It was observed that the second annual cracks occurred at approximately the same locations as the original cracks in most of the cases.

Rutting

The average rut depths of the control section were over three times the average rut depth of the Polybilt and Kraton modified asphalt sections. The rut depths of the passing lane on the control section were also higher than those of the polymer modified sections. It was also observed that the rut depths on the driving lane were greater than in the passing lane.

The average rut depths on the left and right wheel paths of the westbound passing lane were 0.06 and 0.09 inches for the Polybilt modified section, 0.10 and 0.12 inches for the control section, and 0.07 inches for both in the Kraton modified section. The maximum rut depths for the left and right wheel paths on the westbound passing lane were 0.07 and 0.16, 0.13 and 0.22, and 0.09 inches for both in the Polybilt modified, control and Kraton modified sections, respectively. Standard deviations for the left and right wheel paths were 0.01 and 0.03, 0.02 and 0.05, and 0.01 and 0.02 inches for Polybilt, control and Kraton, respectively. The average rut depths of left and right wheel paths of the westbound driving lane were 0.13 and 0.12 inches for the Polybilt modified section, 0.37 and 0.39 inches for the control section, and 0.11 and 0.10 inches in the Kraton modified section. The maximum rut depths for the left and right wheel paths of the westbound driving lane were 0.16 inches for both in the Polybilt modified section, 0.41 and 0.44 inches for the control section, and 0.13 and 0.14 inches for the Kraton modified section. Standard deviations for the left and right wheel paths were 0.02 inches for both in the Polybilt section, 0.04 and 0.07 inches in the control, and 0.03 and 0.02 inches for the Kraton section. Table 14 summarizes the rut depth information for the westbound lanes.

Table 14: Second Annual Post-Construction Rutting - Westbound

	Driving Lane		**Passing Lane**	
	LWP (Inches)	RWP (Inches)	LWP (Inches)	RWP (Inches)
Polybilt				
Average Depths	0.13	0.12	0.06	0.09
Maximum	0.16	0.16	0.07	0.16
Standard Deviation	0.02	0.02	0.01	0.03
Kraton				
Average Depths	0.11	0.10	0.07	0.07
Maximum	0.13	0.14	0.09	0.09
Standard Deviation	0.03	0.02	0.01	0.02
Control				
Average Depths	0.37	0.39	0.10	0.12
Maximum	0.41	0.44	0.13	0.22
Standard Deviation	0.04	0.07	0.02	0.05

Similarly, the average rut depths on the left and right wheel paths of the eastbound passing lane were 0.07 and 0.11 inches for the Polybilt modified section, 0.05 and 0.09 inches for the Kraton modified section, and 0.06 and 0.10 inches for the control section,. The maximum rut depths for the left and right wheel paths, on the westbound passing lane, were 0.09 and 0.13 inches for Polybilt modified section; 0.08 and 0.16 inches for the Kraton modified section, and 0.06 and 0.16 inches for the control section. The standard deviations for the left and right wheel paths of the eastbound passing lanes were 0.02 inches for both in the Polybilt section; 0.02 and 0.04 inches for the Kraton section; and 0.01 and 0.04 inches for the control section. The average rut depths of the left and right wheel paths of the eastbound driving lanes were 0.13 and 0.14 inches for the Polybilt modified section, 0.12 and 0.13 inches for the Kraton modified section, and 0.37 and 0.42 inches for the control section. The maximum rut depths of the left and right wheel paths of the eastbound driving lane were 0.19 and 0.22 inches for the Polybilt modified section, 0.14 inches for both in the Kraton modified section, and 0.47 and 0.50 inches for the control section. Standard deviations for the left and right wheel paths were 0.04 inches for both in the Polybilt section, 0.02 and 0.01 inches in the Kraton section, and 0.08 and 0.10 inches in the control section. Table 15 offers a summary of the eastbound data.

Table 15: Second Annual Post-Construction Rutting - Eastbound

	Driving Lane		**Passing Lane**	
	LWP (Inches)	RWP (Inches)	LWP (Inches)	RWP (Inches)
Polybilt				
Average Depths	0.13	0.14	0.07	0.11
Maximum	0.19	0.22	0.09	0.13
Standard Deviation	0.04	0.04	0.02	0.02
Kraton				
Average Depths	0.12	0.13	0.05	0.09
Maximum	0.14	0.14	0.06	0.16
Standard Deviation	0.02	0.01	0.02	0.04
Control				
Average Depths	0.37	0.42	0.06	0.10
Maximum	0.47	0.50	0.08	0.16
Standard Deviation	0.08	0.10	0.01	0.04

Observations

The purpose of the pavement core study was to see if there exists a correlation between the rut depths observed on modified test sections and control section, and the Marshall test properties of the cores from those sections. The pre-construction pavement cores provided the Marshall test properties of the distressed pavement to the extent of failure. This established the limit of a distressed pavement parameter. The Marshall test properties of the post-construction pavement cores established a base for the possible starting limit that could be expected for the modified and unmodified test sections, under the specific designed pavement. These are the values before any kind of distresses were observed.

Since there were no significant differences between the first and second annual pavement ruts and no core results were available for second annual pavement, the comparisons were made between the first annual rut depths and the Marshall test properties of the first annual pavement cores. The data utilized for the evaluation is found in the second annual report. (*6*)

It was observed that the pavement cores of Kraton modified section had significantly larger air voids and the smallest rut depths. The control section, which had the largest rut depths, had the lowest values of the air voids. The air voids values of cores from between the wheel path were significantly higher than those of the cores from wheel path. Similarly, for the passing

lanes, the modified section with the smallest rut had the largest air voids. Values of the rut depths of the driving lane are significantly higher than the passing lane, while the values of the air voids are significantly lower.

The values of the air voids of the post-construction pavement cores were significantly higher than those of the first annual cores, but the values of the rut depth were significantly lower than those of first annual values. Similarly, the air voids values of the post-construction pavement cores were significantly higher than those of both the pre-construction and first annual pavement cores. But the rut depth values of post-construction pavement cores were significantly lower than those of both the pre-construction and first annual pavement cores.

THIRD ANNUAL EVALUATION

The third annual interim monitoring of the field experimental project was conducted from August 19, to August 22, 1994. Rumble stripping was done since the second annual interim monitoring, and is located on the driving lane shoulders for both eastbound and westbound lanes.

Pavement Surface Condition

The distresses observed in the test section were transverse cracking, forked cracking, longitudinal cracking, bleeding, rutting, raveling, polished aggregate, and weathering. The globules of the polymer modifier seen in previous years were still visible. The distresses observed in the vicinity of a station, approximately 100 feet ahead and back from the station, were recorded for each station.

Transverse Cracks

Transverse cracking was again the major distress witnessed during the third annual evaluation. Most cracks were classified in the low to moderate severity levels; however there were some high severity level cracks present in the Polybilt modified sections. While the distance before and after the MSU stations was reduced from 160 feet to 100 feet, the total number of cracks studied increased over those of the second year. The length of cracks was measured by width of shoulder and fraction of affected driving and passing lanes.

Of the 361 transverse cracks recorded, 74.5 percent were considered low severity, 22.2 percent were considered moderate severity, and the remaining 3.3 percent were considered high severity. Over the entire test section, 203 transverse cracks were full width in length, 98 affected the shoulder only, while the remaining 60 fell into the range between full width and shoulder only.

Similar statistics are available for the modified asphalt sections. The Polybilt section had 53.7 percent low severity cracks, 36.6 percent moderate severity cracks, and 9.8 percent high severity cracks. The Kraton section had 74.1 percent low severity cracks, and 25.9 percent moderate severity cracks. The control section had 95.9 percent low severity cracks, and 4.1 percent moderate severity cracks.

Rut Depth

It is observed that the rut depths in the driving lane are still significantly greater than the rut depths in the passing lane. For the westbound driving lane, the Polybilt section had an average rut depth of 0.13 and 0.12 inches for the left and right wheel paths, respectively. The average rut depth for the left and right wheel paths was 0.42 and 0.41 inches for the control section, and 0.09 and 0.08 inches for the Kraton modified section. The maximum rut depths on the westbound driving lane's left and right wheel paths were 0.19 inches for both in the Polybilt section, 0.46 inches for both in the control, and 0.14 inches for both in the Kraton section. The driving lane had standard deviations of 0.03 and 0.05 inches for Polybilt; 0.04 and 0.06 inches for the control section; and 0.03 for both in the Kraton section. For the westbound passing lane, the average rut depths for the left and right wheel paths were 0.04 and 0.07 inches for Polybilt, 0.09 and 0.10 inches for the control, and 0.04 and 0.05 inches for Kraton. The maximum rut depth was 0.07 and 0.13 inches for Polybilt, 0.11 and 0.18 inches for the control, and 0.06 and 0.09 inches for Kraton. Standard deviations in the passing lane for the two wheel paths were 0.02 and 0.03 inches in the Polybilt section; 0.02 and 0.04 inches in the control section; and 0.01 and 0.02 inches for the Kraton section. Table 16 provides a summary of the rutting on the westbound driving lane.

Table 16: Third Annual Post-Construction Rutting - Westbound

	Driving Lane		**Passing Lane**	
	LWP (Inches)	RWP (Inches)	LWP (Inches)	RWP (Inches)
Polybilt				
Average Depths	0.13	0.12	0.04	0.07
Maximum	0.19	0.19	0.07	0.13
Standard Deviation	0.03	0.05	0.02	0.03
Kraton				
Average Depths	0.09	0.08	0.04	0.05
Maximum	0.14	0.14	0.06	0.09
Standard Deviation	0.03	0.03	0.01	0.02
Control				
Average Depths	0.42	0.41	0.09	0.10
Maximum	0.46	0.46	0.11	0.18
Standard Deviation	0.04	0.06	0.02	0.04

Similarly, for the eastbound driving lane, the average rut depths for the left and right wheel paths were 0.12 inches for both in the Polybilt section, 0.40 and 0.43 inches for the control, and 0.12 and 0.11 inches for Kraton. The maximum rut depths for the left and right wheel paths were 0.15 and 0.24 inches for Polybilt, 0.52 and 0.53 inches for the control section, 0.15 and 0.14 inches for Kraton. The standard deviations for the left and right wheel paths were 0.03 and 0.05 inches for Polybilt, 0.11 inches for both in the control section, and 0.03 and 0.02 inches for Kraton. In the eastbound passing lane, the average rut depth for the left and right wheel paths was 0.05 and 0.08 inches for Polybilt, 0.05 and 0.07 inches for the control, and 0.04 and 0.08 inches for Kraton. The maximum rut depth for the left and right wheel paths were 0.07 and 0.11 inches for Polybilt, 0.07 and 0.12 inches for the control, and 0.06 and 0.11 inches for Kraton. The standard deviations for the left and right wheel paths were 0.01 and 0.02 inches for Polybilt and Kraton, and 0.02 inches for both in the control section. Table 17 shows a summary of the rutting depths for the eastbound data.

Table 17: Third Annual Post-Construction Rutting - Eastbound

	Driving Lane		**Passing Lane**	
	LWP (Inches)	RWP (Inches)	LWP (Inches)	RWP (Inches)
Polybilt				
Average Depths	0.12	0.12	0.05	0.08
Maximum	0.15	0.24	0.07	0.11
Standard Deviation	0.03	0.05	0.01	0.02
Kraton				
Average Depths	0.12	0.11	0.04	0.08
Maximum	0.15	0.14	0.06	0.11
Standard Deviation	0.03	0.02	0.01	0.02
Control				
Average Depths	0.40	0.43	0.05	0.07
Maximum	0.52	0.53	0.07	0.12
Standard Deviation	0.11	0.11	0.02	0.02

FIFTH ANNUAL EVALUATION

No formal evaluation occurred during the fourth year of the project, as there were minimal changes compared with the third year evaluation. Photographs taken by Dr. Armijo testify to this fact.

The fifth annual evaluation brings to an end the contract period between MDT and MSU. The evaluation was conducted in August 1996. The pavement surfaces have not changed significantly since the third annual evaluation. Distresses witnessed were identical to the third year's. Severity levels were about the same for the polymer modified sections, but had increased for the unmodified control section. Moreover, the size of affected areas is increasing in the unmodified sections at a faster pace too.

Transverse Cracking

The conclusions drawn about crack resistance have changed since the second annual evaluation. The initial cracking first witnessed in the second year, brought the conclusion that the modified sections were not resisting cracking as well as the control section. Further analysis of the data from the second year shows that this conclusion was premature. On a per station basis, there were 3.2 cracks per station for Polybilt, 3.9 for the control, and 4.2 for Kraton. Statistically these numbers are identical. It is felt that the error in the original analysis occurred due to an oversight in the how the test sections were set up. Specifically, there are more stations in the modified sections than in the control, nineteen verses fourteen. If the number of cracks is analyzed without accounting for this difference, the results are skewed in favor of the control section.

For the fifth annual evaluation, transverse cracks (Photo R - Appendix A) within 200 feet, before or after an MSU station, were analyzed. Their distance from the station was recorded as was their severity level. Crack sealing operations were conducted on the western end of the project in the Spring 1996 (Photo S - Appendix A). The sealing operation encompasses portions of the Polybilt and Kraton sections. Severity levels of the sealed cracks are not included in this analysis because they were not recorded. The Polybilt and Kraton sections had 26.9 and 26.6 percent of their cracks sealed, respectively. The reflective cracking, as first witnessed in the

second year, had propagated to the driving lanes from the shoulders and the passing lane. Complete information on studied cracks is found in Appendix D.

Analysis of all cracking, including those sealed, on a per station basis, yields a crack density of 14.4 cracks per station for the control section, 11.7 for Polybilt, and 8.3 for the Kraton as displayed in Figure 3. A series of statistical analyses, located in Appendix B, were conducted to see if these numbers were significantly different. This analysis was done with the aid of a computer program from GraphPad Software, Inc., Prism 2.01. The means were tested for significant differences via the t-test. A 95 percent confidence interval, alpha equal to 0.05, was chosen. The variances were tested with an F-test. Alpha was again set at 0.05. Statistical analysis confirms the intuitive conclusion that Kraton is performing better than Polybilt, which is performing better than the control section. Table 18 provides a summary of the statistics on the cracking data.

Table 18: Crack Resistance Summary

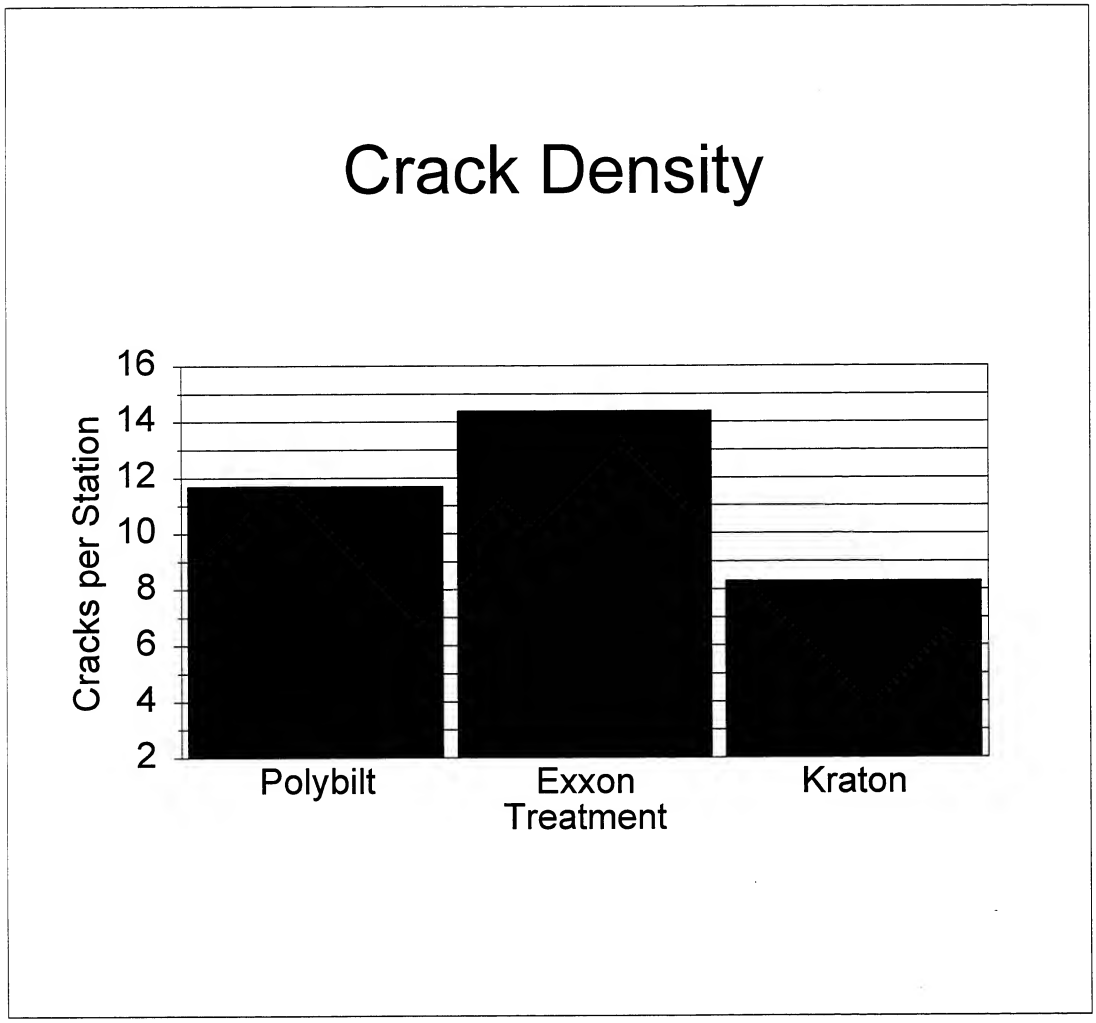
Comparison	Means Significantly Different?*	Variance Significantly Different?**	Statistically Better Performer.
Polybilt vs. Kraton	**Yes**	No	Kraton
Polybilt vs. Exxon	**Yes**	No	Polybilt
Kraton vs. Exxon	**Yes**	**Yes**	Kraton

*t-test performed on means, Alpha=0.05
**F-test performed on variance, Alpha=0.05

Severity level analysis of the unsealed cracks indicates 86.6 percent of the control sections cracks are low severity cracks. Moderate severity cracking accounted for 11.9 percent of the cracks. The remaining 1.5 percent are high severity cracks. Within the Polybilt section 61.9 percent of the unsealed cracks are of the low severity variety. Moderate severity cracks accounted for 26.3 percent of those not sealed, and high severity cracks accounted for 11.9 percent. Rounding errors cause the total percentage to exceed 100 percent. Kraton's unsealed cracks broke down as 91.4 percent and 8.6 percent low and moderate, respectively. Kraton does not have any high severity cracks.

When looking at the longitudinal cracking though (Photo T - Appendix A), the control section is resisting this phenomena better then the modified sections. The majority of the

Figure 3 Crack Density.



longitudinal cracking occurred at the seam between the driving and passing lanes. Only 3.8 percent of the total station length for the control was found to have longitudinal cracking. By contrast, 27.5 percent of the Kraton section and 34.5 percent of the Polybilt section are cracked longitudinally. An investigation of edge cracking (Photo U - Appendix A) reveals that only 0.1 percent of the Kraton section's length is cracked. That is a mere eight feet out of 7600 feet possible. 5.6 percent of the control section is experiencing edge cracking and 15.3 percent of the Polybilt. It should be noted that when looking at both longitudinal and edge cracking, 64 to 100 percent, of the cracking, by modifier asphalt combination, is occurring in the westbound lanes, as displayed in Figures 4 and 5. A review of the construction data does not give any indication of an observed problem during construction. None the less, with such a disparity in the performance of the different directions, it can be assumed the difference between east and west lanes is a reflection of the construction. Data for longitudinal and edge cracking is found in Appendix D.

Rutting

The observations of rutting from previous years remains essentially unchanged. Rut depths of the modified sections driving lanes are about 0.05 inches deeper than the third year measurements. However, the control section's driving lane ruts have grown by more than 0.10 inches. Raw data from the profilograph records is found in Appendix D. Three stations incorporating Polybilt and Kraton, and two stations from the control section, were chosen at random from those available in the westbound direction. These, and their corresponding eastbound counterparts, were graphed relative to the centerline. These graphs can be found in Appendix C.

Statistical analyses, found in Appendix B, was performed on the ruts. The identical tests, t-test and F-test, with the same confidence level, used to compare cracking were carried out again on Prism Software. It was desired to use individual sections, without regard for wheel paths, in the analysis. Therefore, the ruts of the right and left wheel paths, of each utilized treatment and direction, were analyzed to see if their means were significantly different. In every instance the means did not differ significantly. Summarization of the wheel path test is found in Table 19. A repeat of the process was then done to compare Polybilt to Kraton, Polybilt to unmodified

Figure 4 Polybilt Longitudinal and Edge Cracking.

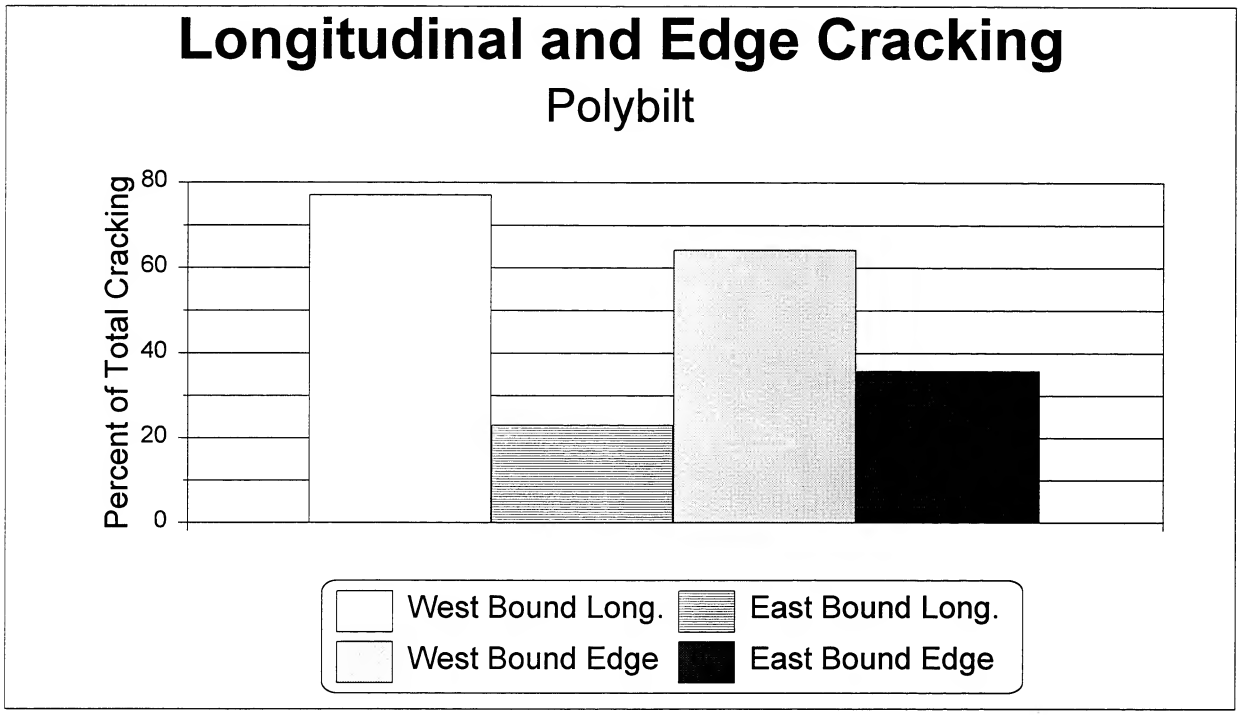
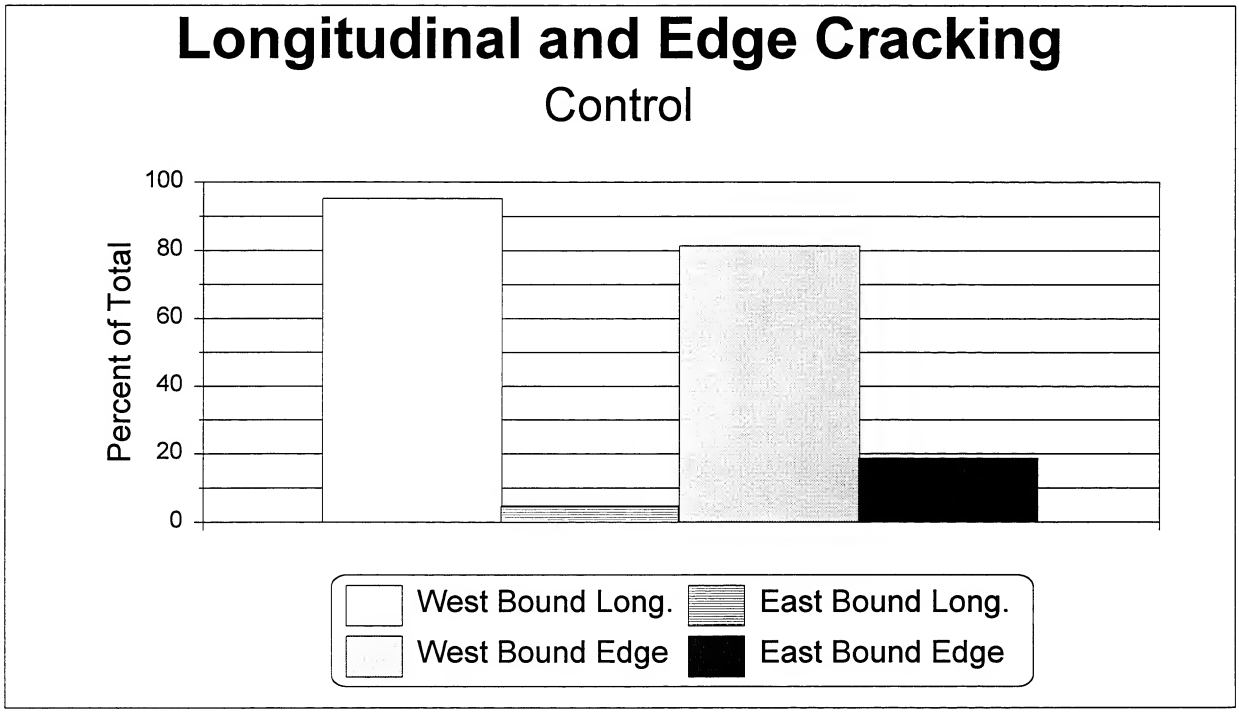


Figure 5 Control Longitudinal and Edge Cracking.



Exxon, and Kraton to unmodified Exxon. These comparisons were done for driving and passing lanes individually. A summarization of the statistical analysis is found in Table 19 and Table 20.

Table 19: Rutting Performance (Left Wheel Path vs. Right Wheel Path)

Item	Means Significantly Different?*	Variance Significantly Different?**	Statistically Better Performer.
Polybilt			
Eastbound Passing Lane	No	No	Neither
Eastbound Driving Lane	No	No	Neither
Westbound Passing Lane	No	**Yes**	Left Wheel Path
Westbound Driving Lane	No	No	Neither
Kraton			
Eastbound Passing Lane	No	No	Neither
Eastbound Driving Lane	No	No	Neither
Westbound Passing Lane	No	**Yes**	Left Wheel Path
Westbound Driving Lane	No	No	Neither
Exxon			
Eastbound Passing Lane	No	No	Neither
Eastbound Driving Lane	No	No	Neither
Westbound Passing Lane	No	No	Neither
Westbound Driving Lane	No	No	Neither

Table 20: Rutting Performance Comparison by Product and Lane

Item	Means Significantly Different?*	Variance Significantly Different?**	Statistically Better Performer.
Eastbound Passing Lane			
Polybilt vs. Kraton	**Yes**	No	Kraton
Polybilt vs. Exxon	No	No	Neither
Kraton vs. Exxon	**Yes**	No	Kraton
Eastbound Driving Lane			
Polybilt vs. Kraton	No	**Yes**	Kraton
Polybilt vs. Exxon	**Yes**	**Yes**	Polybilt
Kraton vs. Exxon	**Yes**	**Yes**	Kraton
Westbound Passing Lane			
Polybilt vs. Kraton	No	No	Neither
Polybilt vs. Exxon	**Yes**	No	Polybilt
Kraton vs. Exxon	**Yes**	No	Kraton
Westbound Driving Lane			
Polybilt vs. Kraton	No	No	Neither
Polybilt vs. Exxon	**Yes**	No	Polybilt
Kraton vs. Exxon	**Yes**	No	Kraton

*t-test performed on means, Alpha=0.05

**F-test performed on variance, Alpha=0.05.

Both modified sections are still performing significantly better than the control section in the driving lanes. In the passing lanes, which are not loaded to the same extent as the driving lanes, the difference is not as pronounced. In fact, in the eastbound passing lane, Polybilt and the control are not statistically different. Also, in every direct comparison, where a difference existed, Kraton is performing better than Polybilt. It is unclear if the difference arose from better performance from Kraton, or is a by product of the utilization of 85/100 penetration grade asphalt and softeners with Polybilt.

In the driving lanes, where both modifiers are outperforming the control by significant margins, the average rut depth for the eastbound driving lanes left wheel paths are 0.17, 0.18 and 0.52 inches for Polybilt, Kraton, and control, respectively. For the right wheel paths the average depths are 0.18, 0.17 and 0.53 inches for Polybilt, Kraton, and control, respectively. Maximum depths for the left and right wheel paths are 0.21 and 0.30, 0.21 for both, and 0.68 and 0.63 inches for Polybilt, Kraton and the control section respectively. Standard deviations for the left wheel paths are 0.04, 0.03, and 0.14 inches for Polybilt, Kraton, and the control section, respectively. For the right wheel path, the standard deviations are 0.05, 0.03, and 0.12 inches, respectively. In the westbound driving lanes the average depths for the left wheel paths are 0.15, 0.12, and 0.51 inches for Polybilt, Kraton, and control, respectively. Average depths for the right wheel paths are 0.18, 0.15 and 0.55 inches, respectively. Maximum depths for the left and right wheel paths are 0.22 and 0.24, 0.18 and 0.21, and 0.59 and 0.60 inches for Polybilt, Kraton, and the controls sections respectively. For the westbound driving lanes standard deviations are 0.04 inches for Polybilt and Kraton, and 0.06 inches for the control section's left wheel paths. For the corresponding right wheel paths, the standard deviations are 0.04 for Polybilt and the control sections, and 0.05 inches for Kraton.

While the differences in rut depths are not as pronounced in the passing lanes, it is none the less noticeable. In the left wheel path of the eastbound passing lane the average depths are 0.08 inches for Polybilt, 0.05 inches for Kraton, and 0.10 inches for the control section. In the right wheel path of the eastbound lane, the average depths are 0.08 inches in the control and Polybilt sections, and 0.07 inches for the Kraton section. Maximum depths are 0.11 and 0.12 inches, 0.10 and 0.09 inches, and 0.13 and 0.12 inches for the left and right wheel paths of Polybilt, Kraton, and control sections, respectively. Standard deviations for the left and right

wheel paths are 0.02 inches for the modified sections and 0.03 inches for the control. In the westbound passing lanes, the average depths are 0.06, 0.07 and 0.11 inches for the left wheel paths of Polybilt, Kraton, and the control sections, respectively. In the right wheel paths, Kraton averaged 0.10 inches, Polybilt averaged 0.09 inches and the control's ruts are 0.13 inches. Maximum rut depths are 0.09 and 0.15 , 0.10 and 0.16, and 0.15 and 0.20 inches for the left and right wheel paths, respectively. Standard deviations for the passing lanes of the left wheel paths are 0.02 inches for the modified sections and 0.03 inches for the control section. For the right wheel paths, the standard deviations 0.04 inches for all of the sections. Figure 6 graphically summarizes rutting information for the fifth annual evaluation. Table 21 provides a summary of the rutting in the driving lanes of the westbound lanes and Table 22 for the eastbound lanes.

Figure 6: Fifth Annual Post-Construction Ruts.

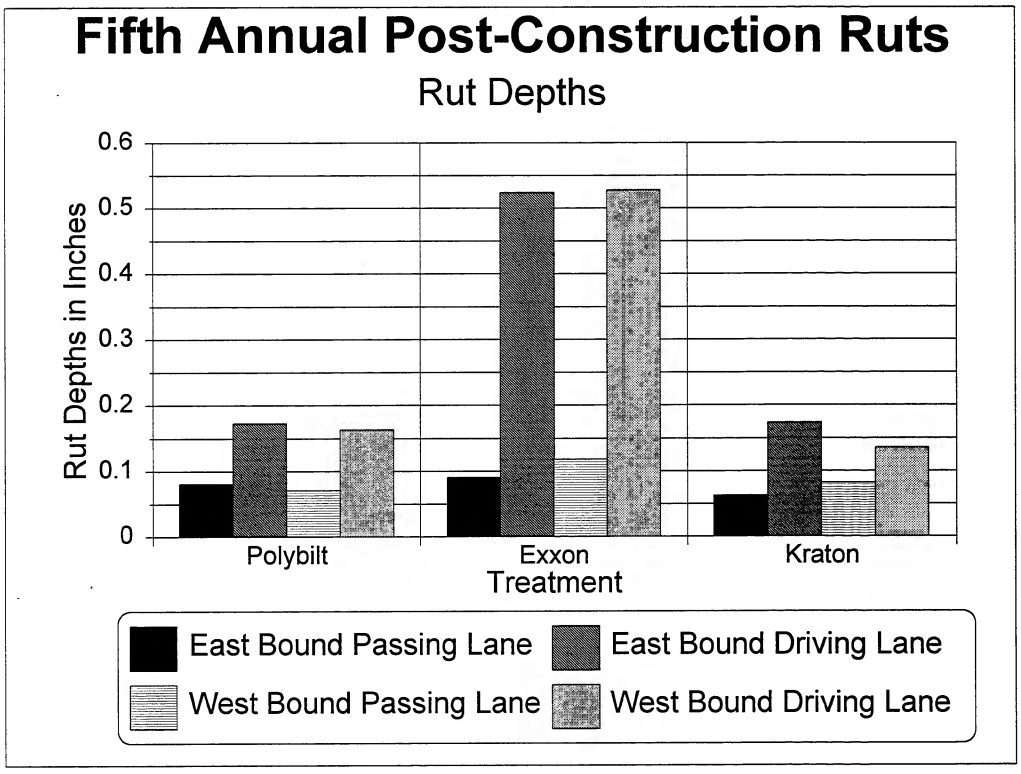


Table 21: Fifth Annual Post-Construction Rutting - Westbound

	Driving Lane		**Passing Lane**	
	LWP	RWP	LWP	RWP
	(Inches)	(Inches)	(Inches)	(Inches)
Polybilt				
Average Depths	0.15	0.18	0.06	0.09
Maximum	0.22	0.24	0.09	0.15
Standard Deviation	0.04	0.04	0.02	0.04
Kraton				
Average Depths	0.12	0.15	0.07	0.10
Maximum	0.18	0.21	0.10	0.16
Standard Deviation	0.04	0.05	0.02	0.04
Control				
Average Depths	0.51	0.55	0.11	0.13
Maximum	0.59	0.60	0.15	0.20
Standard Deviation	0.06	0.04	0.03	0.04

Table 22: Fifth Annual Post-Construction Rutting - Eastbound

	Driving Lane		**Passing Lane**	
	LWP	RWP	LWP	RWP
	(Inches)	(Inches)	(Inches)	(Inches)
Polybilt				
Average Depths	0.17	0.18	0.08	0.08
Maximum	0.21	0.30	0.11	0.12
Standard Deviation	0.04	0.05	0.02	0.02
Kraton				
Average Depths	0.18	0.17	0.05	0.07
Maximum	0.21	0.21	0.10	0.09
Standard Deviation	0.03	0.03	0.02	0.02
Control				
Average Depths	0.52	0.53	0.10	0.08
Maximum	0.68	0.63	0.13	0.12
Standard Deviation	0.14	0.12	0.03	0.03

ECONOMIC ANALYSIS

In an effort to evaluate whether the added costs of the polymer modifiers is justified, an economic analysis is required. To do this, an estimation of the Remaining Service Life (RSL) of the evaluated sections is required. Based on a road condition survey on June 27, 1996, performed by the MDT, a prediction of the remaining life was made by the MDT. This prediction was done for a number of factors. Evaluated factors included alligator cracking, miscellaneous cracking, and rutting.

The RSL for both cracking categories is based on a survey of the first 250 feet of a given one mile section. In the case of alligator cracking, all of the sections with the exception of the westbound passing lane of Kraton and the control material, had the maximum of fifteen years of life left in them. The mentioned Kraton section has 14.6 years of RSL, and the control has 12.6 years. All of the sections had between 13.95 and 14.85 years RSL under the miscellaneous cracking criteria.

The RSL for rutting is based on a continuous rolling survey of an entire one mile section. It is probable that in the collection of the rutting data, the operator would not remain oriented so as to record the maximum rut depth at all times. Consequently, the results will be optimistic. Also, because the value of the RSL is based on an entire mile section, the inputs for each mile section will be based on more than one material. Specifically, for milepost 188, one tenth of the data will have came from the unmodified control sections and nine tenths from modified sections.. For milepost 189, half of the data will be from the unmodified sections and half from the modified sections. And for milepost 190, six tenths are from the modified sections and four tenths were from unmodified, non-control sections. Nonetheless, the data contains useful information. In nearly every case the driving lanes are out performing the passing lanes. As shown by the rutting RSL data, the one mile sections with longer reaches of modified influence, have, in general, more years of service remaining. The exception to this is the driving lane of the westbound 189 milepost. Its 10.63 years of RSL is greater then the values for its companions with greater modifier influence. It is felt that the explanation for this is twofold. First, the potential wandering of the survey vehicle previously mentioned could be coming into play. Second, modified portions of milepost 189 are performing well, and thus countering the effects of the unmodified portion within the milepost 189 sections. Remember, that in every

comparison of the modified test sections to the unmodified control, the test sections performed better statistically. Remember too, that the data for those comparisons came from the highly accurate prophilograph survey data. It is felt, therefore, that if it were possible to drive the survey vehicle in a perfect fashion, this anomaly would not be seen and the modified sections would have higher RSL values. The RSL values can be found in Table 23.

Table 23: Remaining Service Life, in Years

Milepost	Lane	Primary Material	Alligator Cracking Index RSL	Miscellaneous Cracking Index RSL	Rutting RSL
188	Westbound Passing	Kraton	14.6	14.85	13.13
	Westbound Driving	Kraton	15	14.85	9.38
	Eastbound Passing	Polybilt	15	14.1	15
	Eastbound Driving	Polybilt	15	14.7	14.38
189	Westbound Passing	Exxon	12.6	14.55	10.63
	Westbound Driving	Exxon	15	13.95	10.63
	Eastbound Passing	Exxon	15	14.85	15
	Eastbound Driving	Exxon	15	14.7	6.75
190	Westbound Passing	Polybilt	15	14.7	13.13
	Westbound Driving	Polybilt	15	13.95	8.75
	Eastbound Passing	Kraton	15	14.1	15
	Eastbound Driving	Kraton	15	14.85	10

With the RSL estimated for each section, an estimate of the annual costs can be produced. Differences in annual costs will arise from differences in initial costs and maintenance costs. The total cost of construction of each section varied only by the difference in the casts for the asphalt concrete. Identical methods were used to prepare the sites and compact the materials. There would thus be no differences in preparation, compaction, etc. costs. Therefore, those sections with shorter service lives, the construction costs will be greater on a per year of service life basis. Also, a result of the greater resistance of the modified sections to cracking is a reduction in the maintenance costs per year. Finally, for those sections with fifteen years RSL, they are at the maximum possible value. Thus, there may be more then fifteen years RSL in those sections.

The annualized costs for the material is determined by dividing the cost per mile by the RSL. This provides a cost per year per mile. Only the driving lanes will be calculated, using the rutting RSL, as they have the least amount of years left in them. The RSL value is rounded to the nearest year and increased five years to include the first five years of service. Unfortunately this value will skewed by the combination of materials in a given mile stretch. In an effort to help eliminate this bias, it is assumed that a linear relationship exists between the costs of the material in a section. The most unbiased values are found in the 188 stretch, as they contain nine tenths of a mile of an individual material. The results of the analysis are found in Table 24.

Table 24: Annualized Costs

Milepost	Primary Material	Rutting RSL (rounded)	Cost Per Mile	Cost Per Mile Per Year
188	Kraton	9	$161,145.22	$11,510.37
	Polybilt	14	$117,024.81	$6,159.20
189	Exxon/Kraton	11	$129,274.94	$8,079.68
	Exxon/Polybilt	7	$104,763.60	$8,730.30
190	Polybilt	9	$107,828.90	$7,702.06
	Kraton	10	$137,242.51	$9,149.50

CONCLUSIONS

The performance of a pavement can deteriorate rapidly because of premature rutting and cracking. Increasing truck traffic, heavier loads, different wheel configurations, higher tire pressures, and radial tires have accelerated the problems. Extreme climatic conditions, as experienced in eastern Montana, contribute to losses of pavement integrity even faster. The pre-construction pavement surface conditions, on the test sections involved in this research, provided testimony of the extent of pavement deterioration. The drainage pattern of the pavement surface was changed because of rutting.

Conventional methods of asphalt concrete mix design were developed for single axle loads of eighteen kips, with conventional wheel pressures of 70-90 psi. Adjustments of the components of a pavement are now required to strengthen pavements for the new conditions. Asphalt mixes modified with polymers seem to offer a solution to rutting and cracking of pavements.

The production and placement of polymer modified asphalt pavement was not significantly different than that for conventional asphalt binders. The asphalt can be modified locally in the refineries in the state. The identical compaction pattern for both unmodified and modified asphalt sections demonstrated that the modification does not require special efforts to obtain the specified level of compaction. Marshall stability and flow and unit weight fell within design specification. The field density of all modified and unmodified asphalt sections were within 95 to 98 percent of the target density.

The air void contents of PMBS was low. The control section, paved with a conventional mix using regular asphalt, was rutted almost to the depth of the pre-construction level after the first year. Its cores had the lowest number of air voids. The ruts in the modified asphalt sections were significantly lower than the unmodified control section. This can only be attributed to the properties of modified asphalt binders, both Polybilt and Kraton as they represent the only significant difference in the sections. Figures 7-10 show how the ruts have evolved on the tests sections and the control.

Figure 7: Rut Evolution - Eastbound Passing Lane.

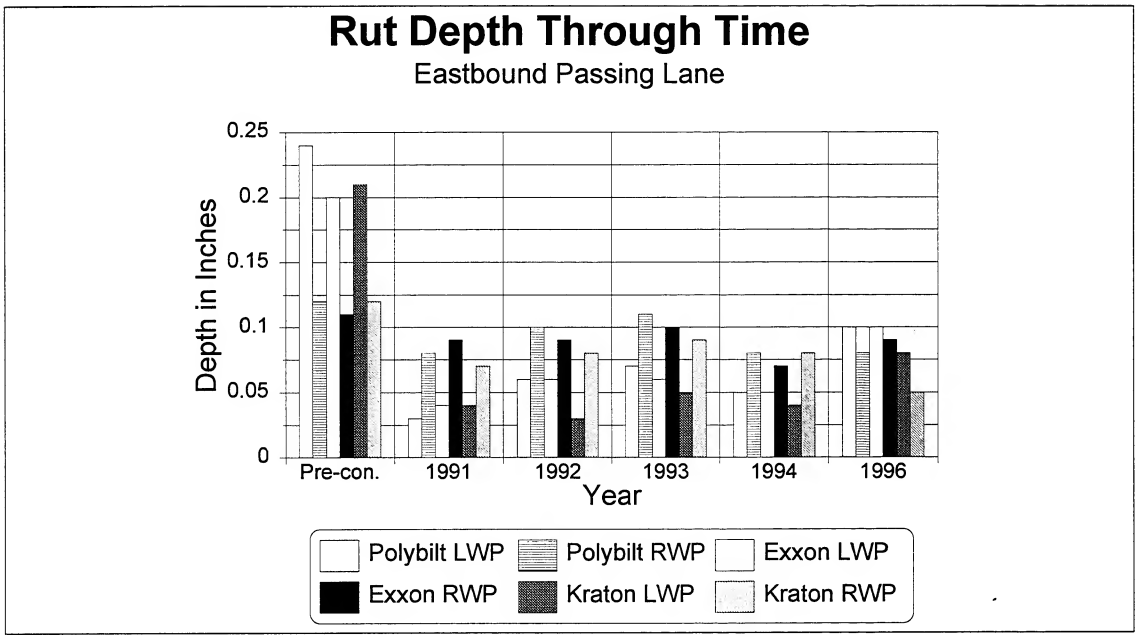


Figure 8: Rut Evolution - Westbound Passing Lane.

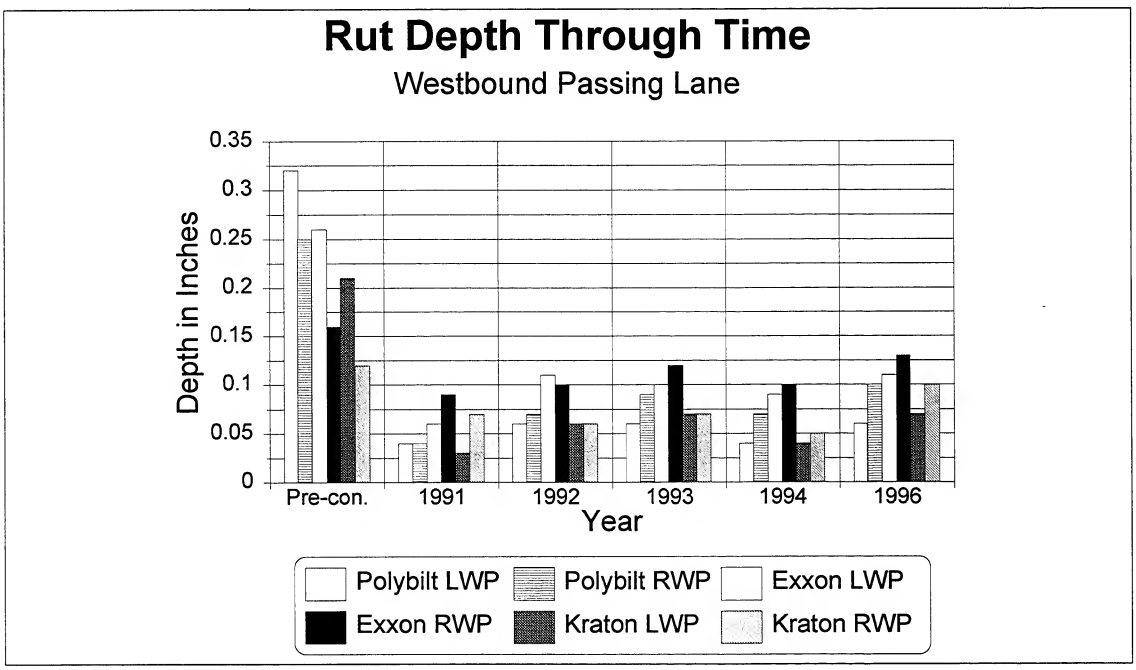


Figure 9: Rut Evolution Westbound Driving Lane.

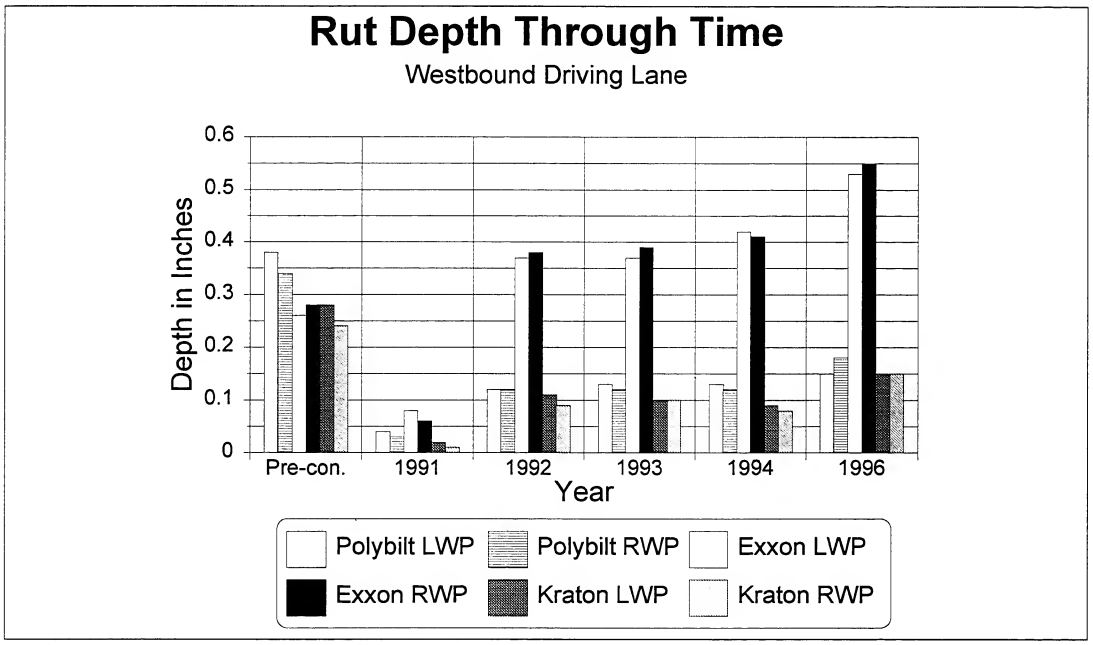
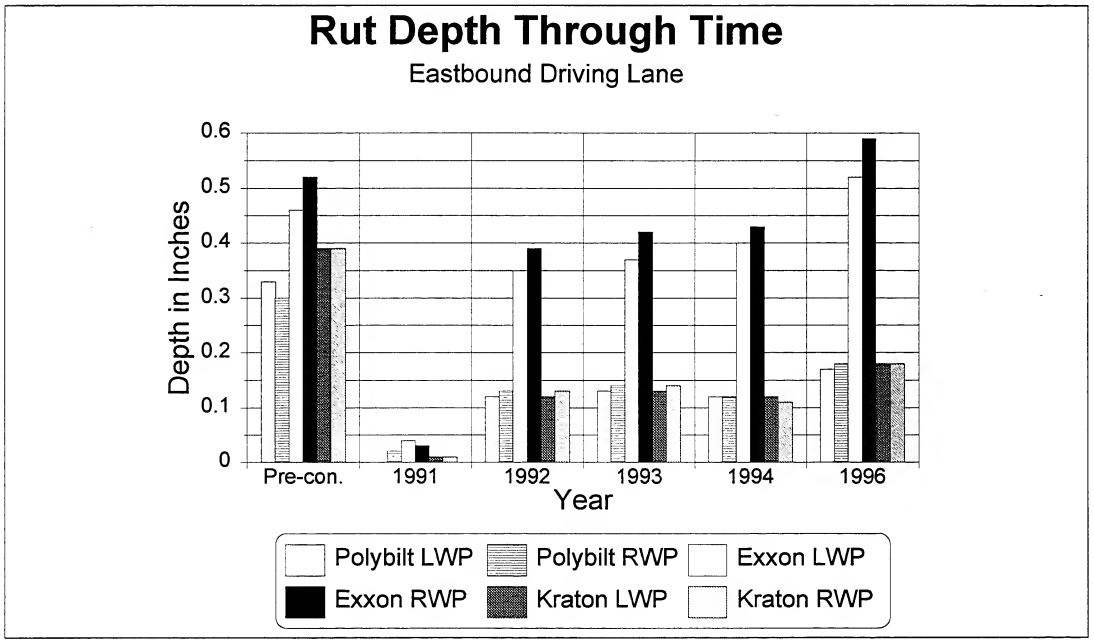


Figure 10: Rut Evolution Eastbound Driving Lane.



Isolated spots of distress such as weathering, raveling and polished aggregate started to appear in all of the test sections after the first year of traffic. These might be the result of the rounded coarse aggregate. It was thought that these distresses may spread over a large area with time, and/or the severity level of these distresses may increase over time. This has been the case for the unmodified control section. In the modified sections, however, the distresses have not propagated as quickly. The benefits of polymer utilization are extending beyond cracking and rutting.

The rutting and cracking of the pavement are reduced significantly by polymer modified asphalt. But, there seems to be limitation to the performance of the polymer modified asphalt. In particular, low limits to low temperatures resulting in the thermal cracking. Performance based SHRP tests could provide guidance to cold region asphalt properties which were not possible before. The tensile failure properties of asphalt cement binder at low in-service temperatures could be determined using the direct tension test. Also, the low temperature creep response of asphalt binders could be determined using the bending beam rheometer. None the less, the modifiers offer an improvement to conventional asphalt in this respect too.

The extensive study of the Marshall test properties of the cores from pre-construction and after the first year of service, resulted in confirming the inverse relationship between the air voids and rut depth. The air void parameter of the Marshall test should be taken seriously in the designing of a mix and construction of the pavement, for both modified and unmodified asphalt. The variables that affect the air voids are the compaction effort 50 versus 75 blows, mineral filler and fines, aggregates size large stone versus conventional, and the gradation. If sufficient control is introduced in these variables, air voids could be controlled as desired.

Kraton seemed to produce higher air voids, for the same design method and compaction. Kraton modified asphalt mix hardens quickly with reduction of the mix temperature. The compaction of Kraton modified mix is sensitive to the temperature. This characteristic of the Kraton modified asphalt might have resulted higher air voids.

An economic analysis of the various sections indicates that the Polybilt is costing the least per year of projected service. This projection is based on a section's RSL as determined by the MDT utilizing a rutting criteria. The same could have been carried out using a cracking criteria, but the limiting factor appears to be the rutting. The conclusions that Polybilt is

performing the best, economically, would be less dramatic if an actual dollar amount could be determined for maintenance.

In analyzing the data from the past five years, Kraton consistently performed better structurally then either Polybilt or Exxon 85/100 penetration grade asphalt. This is in-spite of Kraton having the lowest Marshall stability of tested products. The higher air voids found in the Kraton cores are felt to be the primary factor in its higher performance. Polybilt performed better structurally then the unmodified control section, resisting cracking and rutting better. All of the modified sections suffered less from weathering, raveling, polished aggregate, and bleeding than did the control sections. However, the best resistance to longitudinal cracking was exhibited by the Exxon 85/100 section. Exxon also outperformed Polybilt in its ability to resist edge cracking too.

Economically, Polybilt is providing the greatest return for the invested dollar. This is based strictly on material costs alone. If other construction factors were introduced into the analysis, both Polybilt and Kraton would widen and/or close the gap with the control section. The same can be said about maintenance costs. Both modifiers are resisting transverse cracking better then the control, so they will require less crack sealing dollars.

RECOMMENDATIONS and IMPLEMENTATION

Documentation as a result of this long term study has shown that polymer modifiers are highly beneficial in the reduction of pavement cracking and rutting. It is therefore the recommendation of this study that polymer modifiers be utilized on all high traffic areas of Montana's highway system. The entire Interstate system within our borders is found within this category. Modifiers should also be used in localized areas of heavy loading. This would include sections of Montana with oil field, mining, timber, and/or agricultural activity. These operations tend to increase loading to specific stretches of a road because of the heavy equipment required by these industries. Also, Federal and State highways with high commercial vehicle portions of the ADT's will benefit from polymer modifiers, extending the useful life of their pavements as well.

While the research does not offer a recommendation for asphalt brand, it does recommend using 120/150 penetration grade asphalt. Standard practice is to use 120/150 grade asphalt concrete when polymer modifiers are applied. It is felt that Polybilt may have been handicapped structurally by the use of 85/100 penetration grade asphalt and softeners. Moreover, using softeners necessitates another addition to the asphalt. This provides another opportunity for incomplete mixing, and/or operator error, adding too much or too little material. Any future test sections should use the same brand and grade of asphalt. This eliminates an additional variable that must be included in the analyses.

The majority of the cracking that has occurred in the five years of study has been reflective. The reflection has occurred in the passing lanes and on the shoulders. Reflective cracking has not been documented in the driving lanes. This action seems to have eliminated the reflection of pre-construction cracks from the driving lanes on this project. A cost benefit analysis of trenching the whole pavement width to reduce the reflective cracking verses transverse crack maintenance should be carried out for the life cycle. Another MDT/MSU project, MDT Research Project No. 8123, entitled "Methods for Remediation of Stripped Asphalt Pavement: Research and Investigation", may offer further evidence to support or refute the benefits of milling the full width prior to overlaying. Detailed distress maps were made of the test and control sections, including the pre-construction cracking. Also, the overlay asphalt cement was modified with a polymer. The control sections were milled the entire width of the

pavement prior to overlaying. If milling will truly aid in the reduction of reflective cracking, it should be demonstrated by the evolution of that project. It is, therefore, recommended that the data obtained from the stripped asphalt study be used in conjunction with what was seen in this investigation to determine the future of milling.

Another item to consider in the layout of any future test sections is the geometry of the sections. A straight, relatively level test section will reduce variables requiring attention of the investigator(s), thus improving the value of the research. Our test sections incorporated changes in both vertical and horizontal alignment. The only product whose performance may have been influenced by this was the Exxon control section. Exxon was on the steepest uphill sections. But, as the changes are not very pronounced, their effects in skewing the results of this study are minimal.

With the test sections in place, continuing this research would be economically prudent. It is recommended that field surveys continue in the future at five year intervals until any portion of the test sections is overlaid. The cost of doing a survey, compiling the data, and writing a report is less then $5000.00 per five year period. Continuing the research in this fashion will provide a cost effective means of on-going tracking of the deterioration of the pavements. Knowledge that can be gained from the five year reports includes:

1. Data to track the pavement's remaining life.

2. Accurate tracking of the progression of rut growth. Will the modified sections continue to resist rutting over a longer term? Will the modifiers offer a more tangible benefit in the passing lane with time?

3. Progressive tracking of pavement deterioration from further cracking. How will the modified sections respond to the crack sealing operations of the past Spring?

4. Continued tracking will allow for more accurate cost analysis. Better incorporation of maintenance costs can be included in the economic analysis.

5. The validity of conclusions will improve with further research. As was seen with the analysis of the cracking, errors can be made. At two years there was no difference in the performance of the materials resistance to cracking. Now at five years the modifiers are offering superior resistance to cracking.

REFERENCES:

1. Armijo, J., Pradhan, M., and Franchi, M. (1989), "Effects of Commercial Modifiers on the Physical Properties of Montana Asphalts".

2. Armijo, J.; and Pradhan, M. (1991), "Construction and Post-construction Report, Field Experimental Project Utilizing Asphalt Modifiers".

3. Jonutis, S (1996), Montana Department of Transportation - Glendive,.

4. Stratigic Highway Research Program (1993), "Distress Identification Manual For Long-Term Pavement Performance Studies", SHRP-P-338.

5. Armijo, J.; and Pradhan, M. (1992), "First Annual Interim Report, Field Experimental Project Utilizing Asphalt Modifiers".

6. Armijo, J.; and Pradhan, M. (1993), "Second Annual Interim Report, Field Experimental Project Utilizing Asphalt Modifiers".

7. Armijo, J.; and Greenheck, J. (1994), "Third Annual Interim Report, Field Experimental Project Utilizing Asphalt Modifiers".

8. National Oceanic and Atmospheric Administration, (1985), "Climates of the States" 3rd Edition.

APPENDIX A

PHOTOGRAPHS

Photo A: Pre-construction, transverse cracking, rutting, and bleeding.

Photo B: Pre-construction sealed crack.

Photo C: Chip sealing and overlays to driving lane.

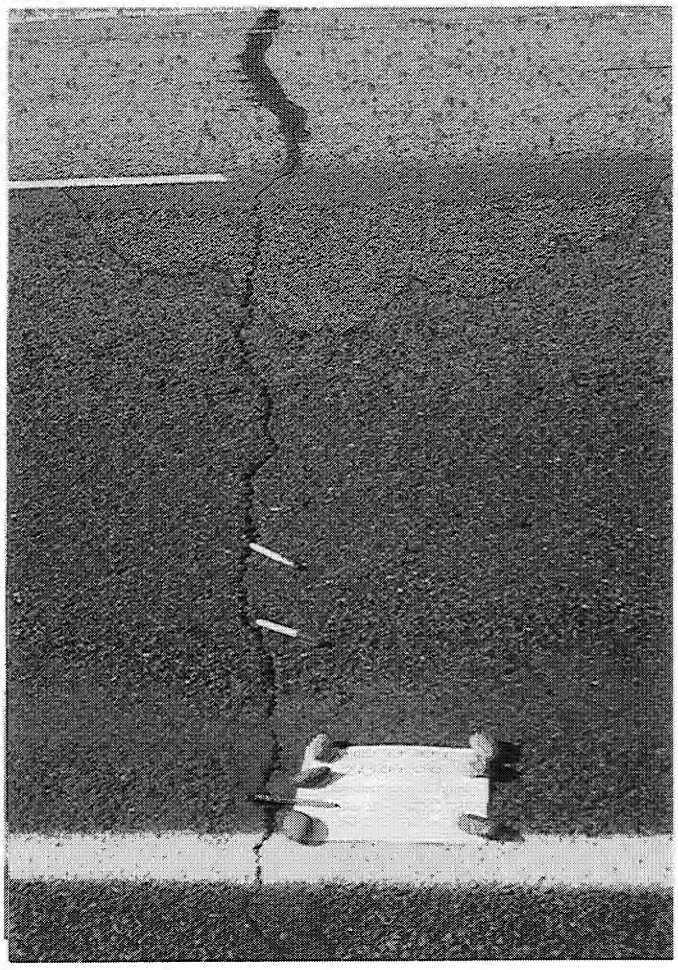


Photo D: Pre-construction transverse crack.

Photo E: Pre-construction longitudinal crack.

Photo F: Milled surface prior to application of tact.

Photo G: Post-construction surface with polymer globule.

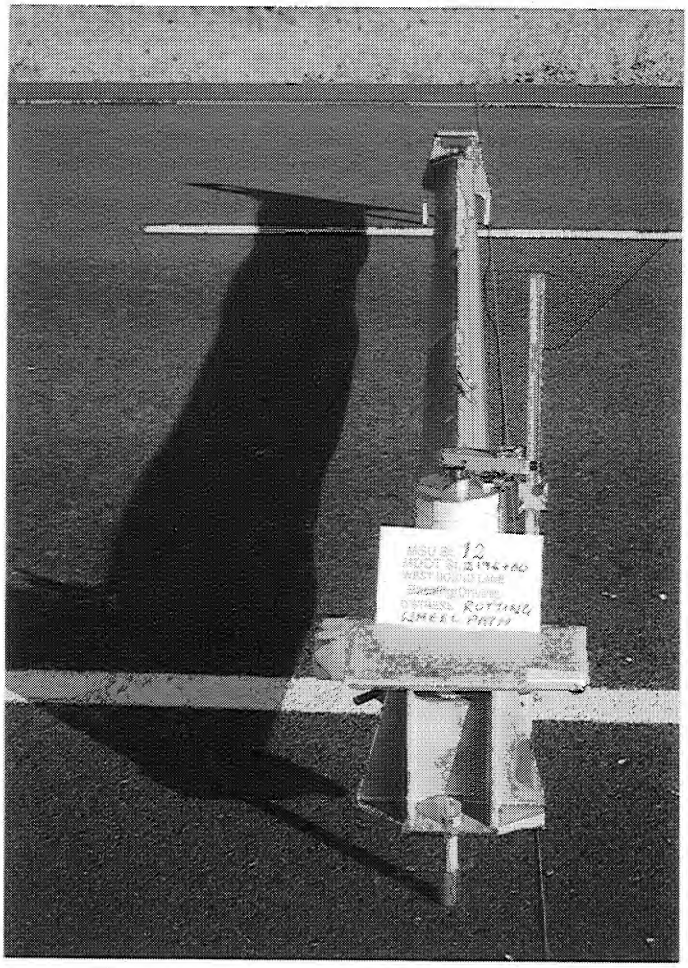


Photo H: First annual rutting in control section and prophilograph.

Photo I: Raveling form first annual evaluation.

Photo J: Spot bleeding from first annual survey.

Photo K: Polished aggregate and bleeding from first annual evaluation.

Photo L: Raveling, weathering, and transverse cracking from second annual evaluation.

Photo M: Polished aggregate, cracking with seeping water from second annual evaluation.

Photo N: Bleeding from second annual evaluation.

Photo O: Large bleeding spot from second annual evaluation.

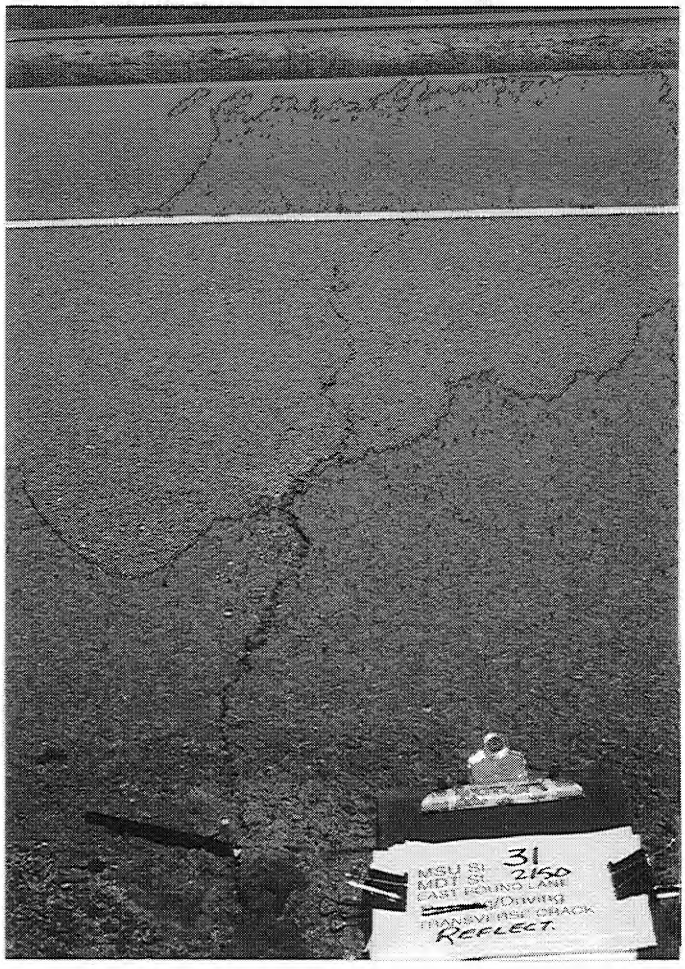


Photo P: Transverse cracking from second annual evaluation.

Photo Q: Reflective transverse crack from second annual evaluation.

Photo R: Transverse crack from the fifth annual evaluation.

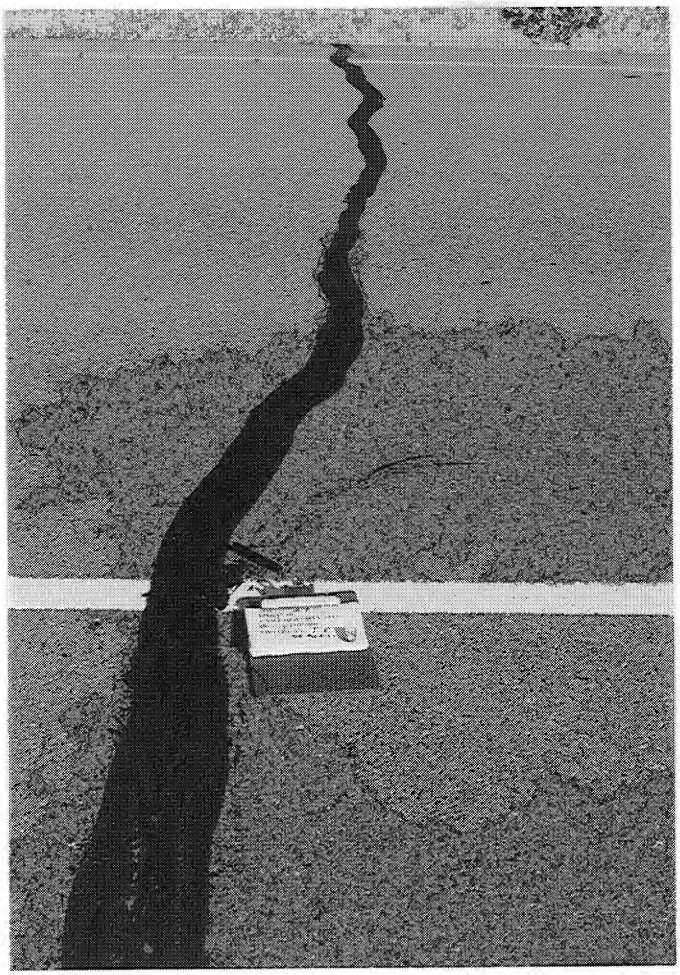


Photo S: Sealed transverse crack from fifth annual evaluation.

Photo T: Sealed longitudinal and transverse cracks from fifth annual evaluation.

Photo U: Sealed edge cracking from fifth annual evaluation.

Photo V: Asphalt globule from fifth annual evaluation.

APPENDIX B

STATISTICS

Table 25: Crack Density Data

Cracks per Station:

Polybilt	Exxon	Kraton
11	13	14
15	12	9
9	19	8
12	19	6
8	22	6
13	20	4
12	15	11
8	8	11
13	11	7
15	13	8
8	14	8
9	14	9
6	13	8
12	9	9
14		9
14		7
11		4
19		10
14		9

Polybilt vs. Kraton (Cracking)

Unpaired t test

P value 0.0006

Are means significantly different? ($P < 0.05$) Yes

One- or two-tailed P value? Two-tailed

t, df t=3.790 df=36

How big is the difference?

Mean ± SEM of Polybilt. 11.74 ± 0.7329 N=19

Mean ± SEM of Kraton. 8.263 ± 0.5506 N=19

Difference between means 3.474 ± 0.9167

95% confidence interval -5.334 to -1.613

R squared 0.2852

F test to compare variances

F,DFn, Dfd 1.772, 18, 18

P value 0.1173

Are variances significantly different? No

Polybilt vs. Exxon (Cracking)

Unpaired t test
P value 0.0436
Are means significantly different? (P < 0.05) Yes
One- or two-tailed P value? Two-tailed
t, df t=2.104 df=31

How big is the difference?
Mean ± SEM of Polybilt. 11.74 ± 0.7329 N=19
Mean ± SEM of Exxon. 14.43 ± 1.113 N=14
Difference between means -2.692 ± 1.280
95% confidence interval 0.08158 to 5.302
R squared 0.1249

F test to compare variances
F,DFn, Dfd 1.699, 13, 18
P value 0.1469
Are variances significantly different? No

Kraton vs. Exxon (Cracking)

Unpaired t test
P value P<0.0001
Are means significantly different? (P < 0.05) Yes
One- or two-tailed P value? Two-tailed
t, df t=5.372 df=31

How big is the difference?
Mean ± SEM of Exxon. 14.43 ± 1.113 N=14
Mean ± SEM of Kraton. 8.263 ± 0.5506 N=19
Difference between means 6.165 ± 1.148
95% confidence interval -8.506 to -3.824
R squared 0.4821

F test to compare variances
F,DFn, Dfd 3.010, 13, 18
P value 0.0160
Are variances significantly different? Yes

Figure B-1: Scattering of Crack Density.

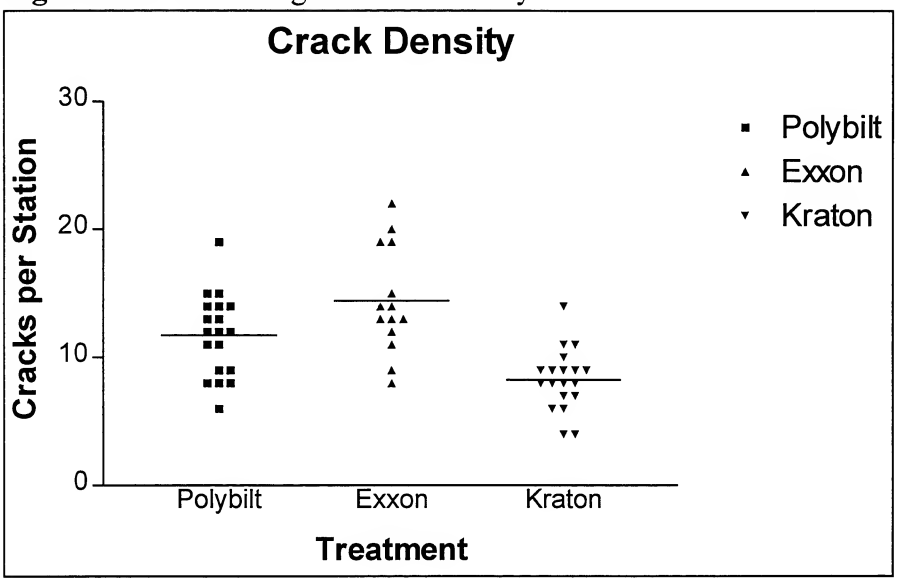


Table 26: Polybilt Eastbound Driving Lane
Rut Depth in Inches:

Station #	LWP	RWP
27	0.21	0.18
28	0.17	0.17
29	0.19	0.17
30	0.20	0.19
31	0.17	0.30
32	0.17	0.16
33	0.10	0.15
34	0.19	0.17
35	0.10	0.12

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.5742
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=0.5736 df=16

How big is the difference?
Mean ± SEM of LWP. 0.1667 ± 0.01344 N=9
Mean ± SEM of RWP. 0.1789 ± 0.01654 N=9
Difference between means -0.01222 ± 0.02131
95% confidence interval -0.03295 to 0.05739
R squared 0.02015

F test to compare variances
F,DFn, Dfd 1.515, 8, 8
P value 0.2853
Are variances significantly different? No

Figure B-2: Rut Depth Scattering for Polybilt Eastbound Driving Lane.

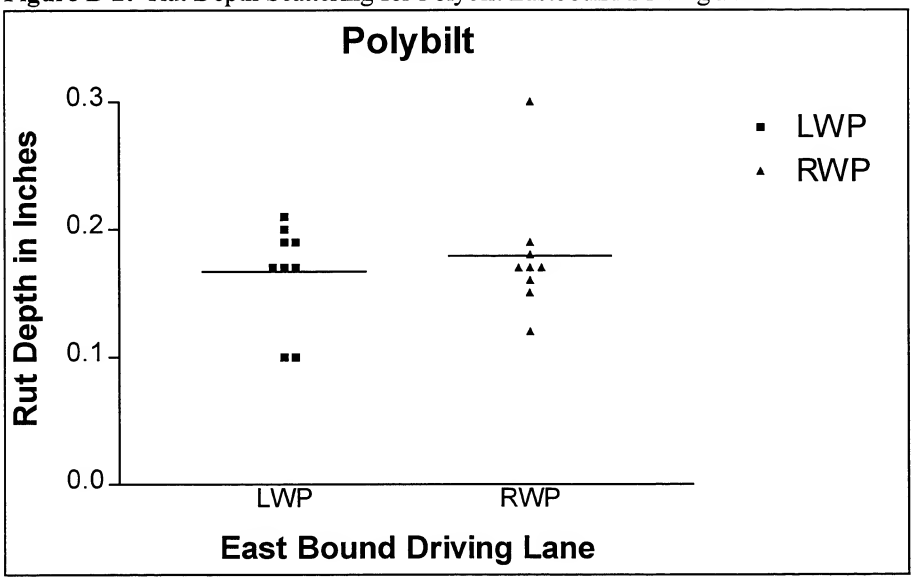


Table 27: Polybilt Eastbound Passing Lane
Rut Depth in Inches:

Station #	LWP	RWP
27	0.11	0.08
28	0.05	0.05
29	0.07	0.08
30	0.08	0.08
31	0.07	0.08
32	0.08	0.07
33	0.08	0.09
34	0.11	0.12
35	0.07	0.09

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.8069
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=0.2485 df=16

How big is the difference?
Mean ± SEM of LWP. 0.0800 ± 0.006455 N=9
Mean ± SEM of RWP. 0.08222 ± 0.006186 N=9
Difference between means -0.002222 ± 0.008941
95% confidence interval -0.01673 to 0.02118
R squared 0.003846

F test to compare variances
F,DFn, Dfd 1.089, 8, 8
P value 0.4536
Are variances significantly different? No

Figure B-3: Rut Depth Scattering for Polybilt Eastbound Passing Lane.

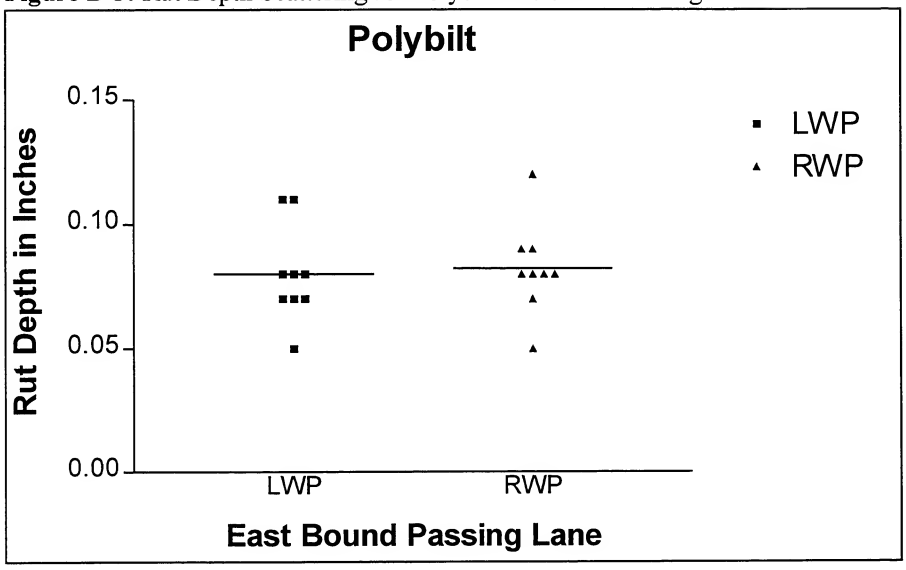


Table 28: Polybilt Westbound Driving Lane
Rut Depth in Inches:

Station #	LWP	RWP
1	0.19	0.24
2	0.22	0.20
3	0.12	0.24
4	0.20	0.17
5	0.14	0.20
6	0.12	0.14
7	0.09	0.16
8	0.12	0.14
9	0.12	0.17
10	0.13	0.15

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.0607
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=2.001 df=18

How big is the difference?
Mean ± SEM of LWP. 0.1450 ± 0.01352 N=10
Mean ± SEM of RWP. 0.1810 ± 0.01187 N=10
Difference between means -0.0360 ± 0.01799
95% confidence interval -0.001805 to 0.07381
R squared 0.1819

F test to compare variances
F,DFn, Dfd 1.296, 9, 9
P value 0.3527
Are variances significantly different? No

Figure B-4: Rut Depth Scattering for Polybilt Westbound Driving Lane.

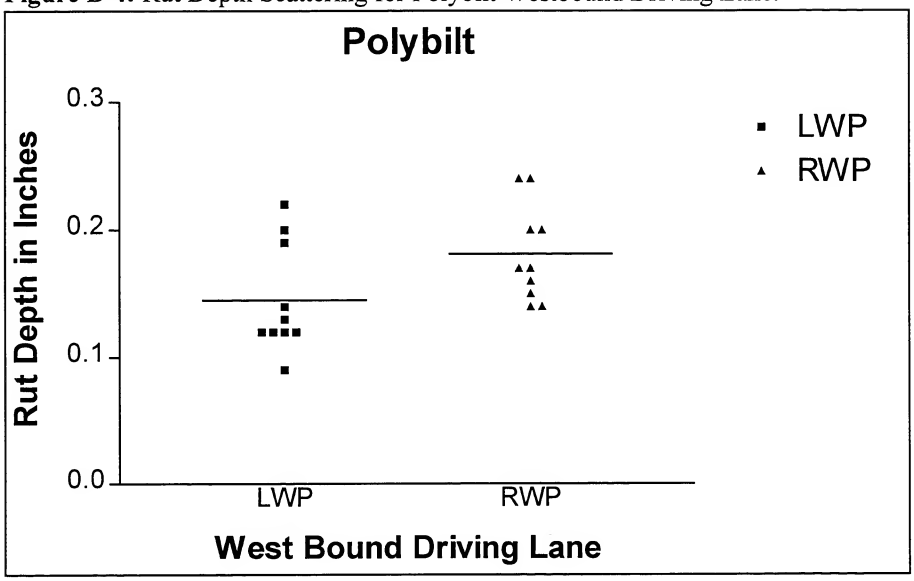


Table 29: Polybilt Westbound Passing Lane
Rut Depth in Inches:

Station #	LWP	RWP
1.	0.06	0.07
2.	0.09	0.07
3.	0.06	0.06
4.	0.07	0.09
5.	0.03	0.03
6.	0.05	0.08
7.	0.07	0.14
8.	0.04	0.10
9.	0.07	0.07
10.	0.08	0.15

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.0776
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=1.872 df=18

How big is the difference?
Mean ± SEM of LWP. 0.0620 ± 0.005735 N=10
Mean ± SEM of RWP. 0.0860 ± 0.01147 N=10
Difference between means -0.0240 ± 0.01282
95% confidence interval -0.002942 to 0.05094
R squared 0.1629

F test to compare variances
F,DFn, Dfd 4.000, 9, 9
P value 0.0255
Are variances significantly different? Yes

Figure B-5: Rut Depth Scattering for Polybilt Westbound Passing Lane.

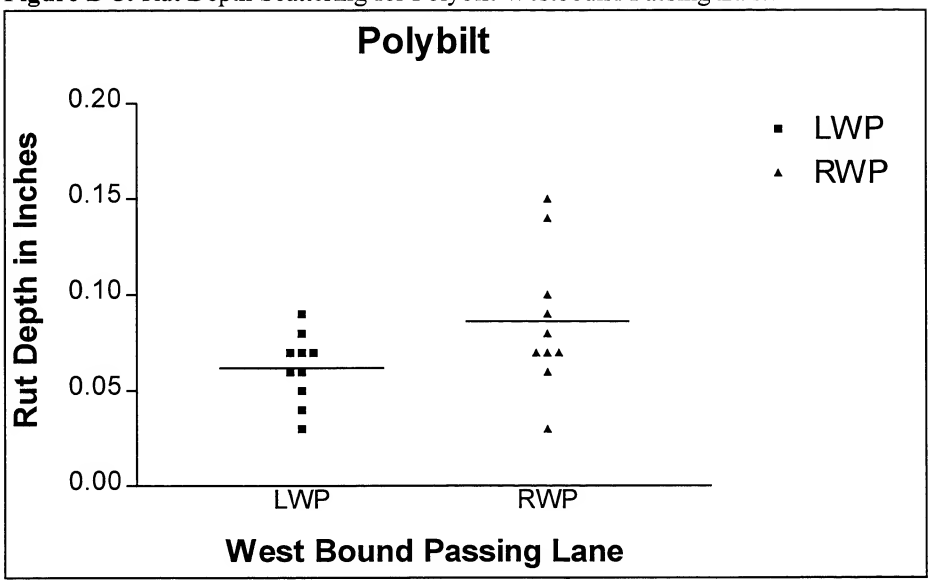


Table 30: Exxon Eastbound Driving Lane
Rut Depth in Inches:

Station #	LWP	RWP
36	0.25	0.30
37	0.49	0.49
38	0.50	0.56
39	0.54	0.61
40	0.51	0.51
41	0.68	0.63
42	0.64	0.63

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.8064
Are means significantly different? ($P < 0.05$) No
One- or two-tailed P value? Two-tailed
t, df t=0.2505 df=12

How big is the difference?
Mean ± SEM of LWP. 0.5157 ± 0.05223 N=7
Mean ± SEM of RWP. 0.5329 ± 0.04422 N=7
Difference between means -0.01714 ± 0.06844
95% confidence interval -0.1320 to 0.1663
R squared 0.005202

F test to compare variances
F,DFn, Dfd 1.395, 6, 6
P value 0.3482
Are variances significantly different? No

Figure B-6: Rut Depth Scattering for Exxon Eastbound Driving Lane.

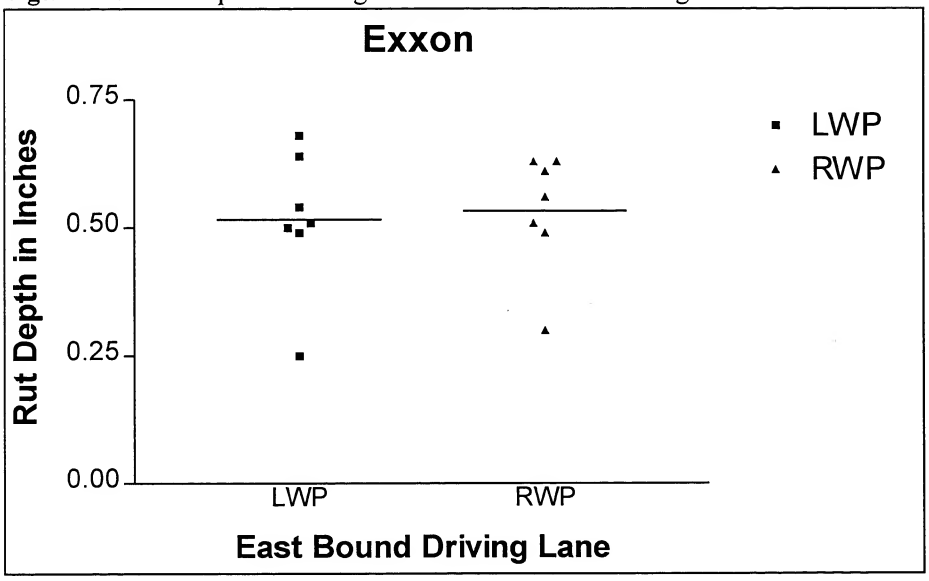


Table 31: Exxon Eastbound Passing Lane
Rut Depth in Inches:

Station #	LWP	RWP
36	0.06	0.06
37	0.09	0.05
38	0.09	0.09
39	0.12	0.12
40	0.11	0.08
41	0.13	0.06
42	0.12	0.09

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.0850
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=1.877 df=12

How big is the difference?
Mean ± SEM of LWP. 0.1029 ± 0.009184 N=7
Mean ± SEM of RWP. 0.07857 ± 0.009110 N=7
Difference between means 0.02429 ± 0.01294
95% confidence interval -0.05247 to 0.003902
R squared 0.2270

F test to compare variances
F,DFn, Dfd 1.016, 6, 6
P value 0.4924
Are variances significantly different? No

Figure B-7: Rut Depth Scattering for Exxon Eastbound Passing Lane.

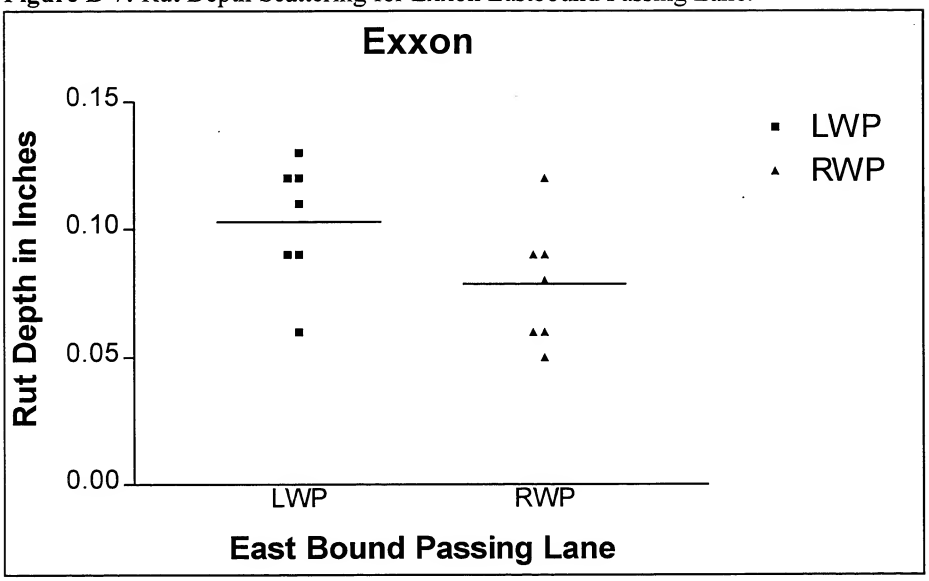


Table 32: Exxon Westbound Driving Lane
Rut Depth in Inches:

Station #	LWP	RWP
11.	0.53	0.57
12.	0.59	0.60
13.	0.56	0.57
14.	0.54	0.50
15.	0.49	0.53
16.	0.45	0.51
17.	0.41	0.54

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.2199
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=1.294 df=12

How big is the difference?
Mean ± SEM of LWP. 0.5100 ± 0.02400 N=7
Mean ± SEM of RWP. 0.5457 ± 0.01360 N=7
Difference between means -0.03571 ± 0.02759
95% confidence interval -0.02440 to 0.09583
R squared 0.1225

F test to compare variances
F,DFn, Dfd 3.114, 6, 6
P value 0.0963
Are variances significantly different? No

Figure B-8: Rut Depth Scattering for Exxon Westbound Driving Lane.

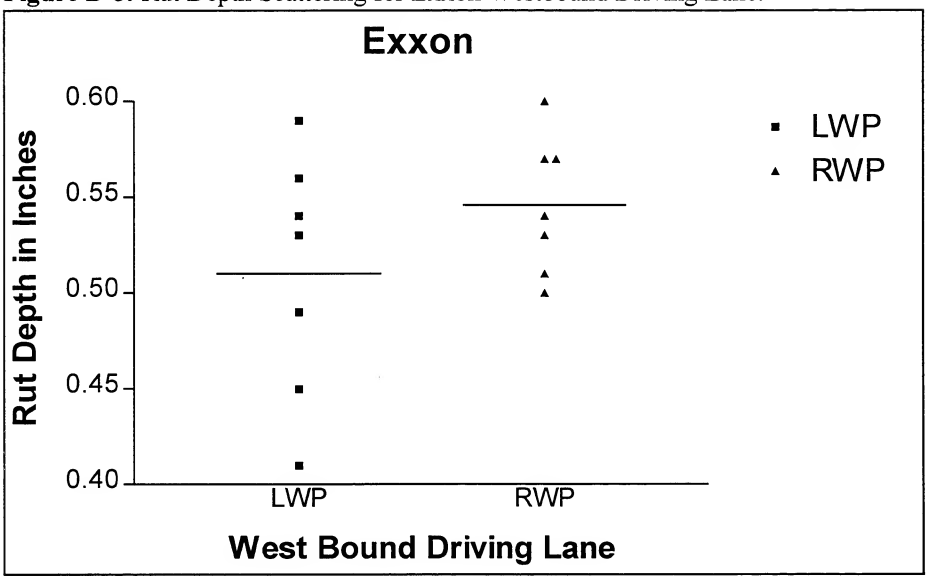


Table 33: Exxon Westbound Passing Lane
Rut Depth in Inches:

Station #	LWP	RWP
11.	0.08	0.09
12.	0.08	0.13
13.	0.12	0.20
14.	0.09	0.10
15.	0.14	0.15
16.	0.09	0.10
17.	0.15	0.13

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.2605
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=1.181 df=12

How big is the difference?
Mean ± SEM of LWP. 0.1071 ± 0.01107 N=7
Mean ± SEM of RWP. 0.1286 ± 0.01438 N=7
Difference between means -0.02143 ± 0.01815
95% confidence interval -0.01811 to 0.06097
R squared 0.1041

F test to compare variances
F,DFn, Dfd 1.689, 6, 6
P value 0.2701
Are variances significantly different? No

Figure B-9: Rut Depth Scattering for Exxon Westbound Passing Lane.

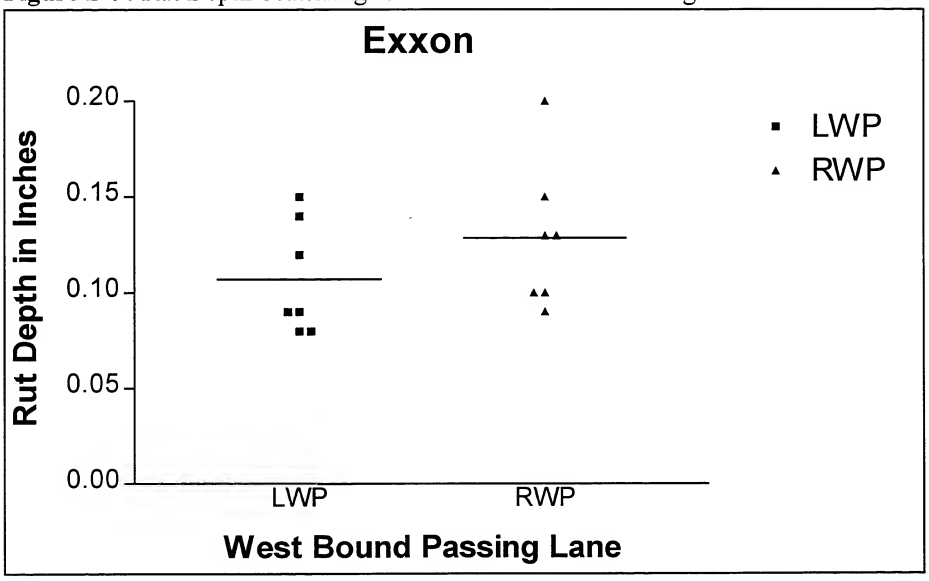


Table 34: Kraton Eastbound Driving Lane
Rut Depth in Inches:

Station #	LWP	RWP
43	0.12	0.13
44	0.20	0.19
45	0.18	0.19
46	0.21	0.19
47	0.16	0.16
48	0.19	0.13
49	0.17	0.18
50	0.18	0.15
51	0.15	0.18
52	0.20	0.21

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.6860
Are means significantly different? ($P < 0.05$) No
One- or two-tailed P value? Two-tailed
t, df t=0.4108 df=18

How big is the difference?
Mean ± SEM of LWP. 0.1760 ± 0.008589 N=10
Mean ± SEM of RWP. 0.1710 ± 0.008622 N=10
Difference between means 0.005000 ± 0.01217
95% confidence interval -0.03057 to 0.02057
R squared 0.009290

F test to compare variances
F,DFn, Dfd 1.008, 9, 9
P value 0.4956
Are variances significantly different? No

Figure B-10: Rut Depth Scattering for Kraton Eastbound Driving Lane.

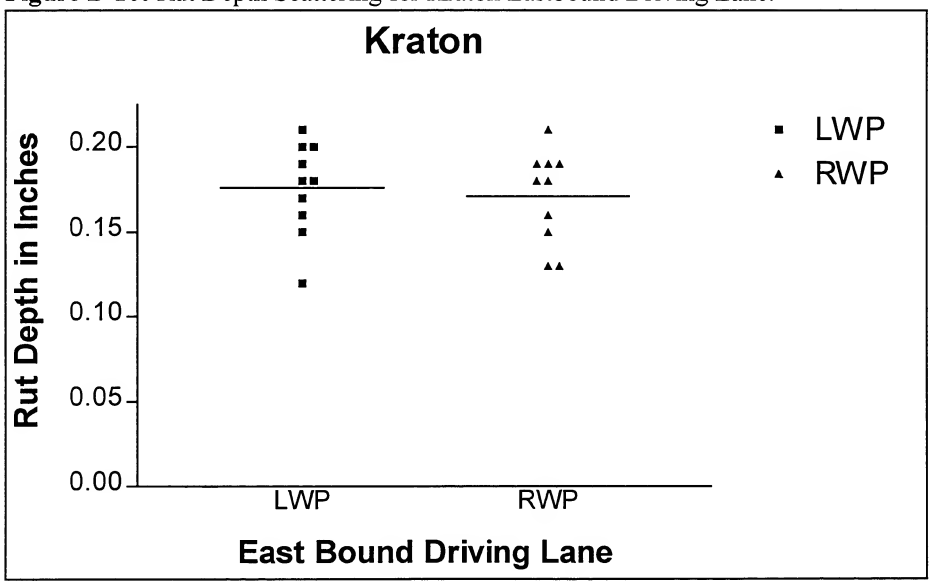


Table 35: Kraton Eastbound Passing Lane
Rut Depth in Inches:

Station #	LWP	RWP
43	0.07	0.04
44	0.08	0.08
45	0.07	0.04
46	0.06	0.04
47	0.09	0.02
48	0.07	0.04
49	0.03	0.06
50	0.10	0.07
51	0.07	0.09
52	0.08	0.06

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.0626
Are means significantly different? ($P < 0.05$) No
One- or two-tailed P value? Two-tailed
t, df t=1.985 df=18

How big is the difference?
Mean ± SEM of LWP. 0.0720 ± 0.005925 N=10
Mean ± SEM of RWP. 0.0540 ± 0.006864 N=10
Difference between means 0.0180 ± 0.009068
95% confidence interval -0.03705 to 0.001051
R squared 0.1796

F test to compare variances
F,DFn, Dfd 1.342, 9, 9
P value 0.3343
Are variances significantly different? No

Figure B-11 Rut Depth Scattering for Kraton Eastbound Passing Lane.

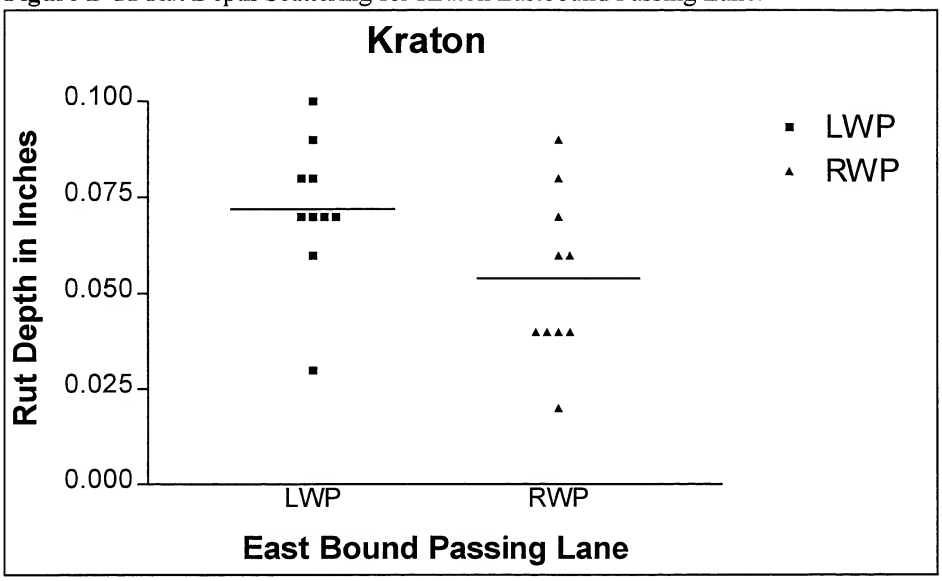


Table 36: Kraton Westbound Driving Lane
Rut Depth in Inches:

Station #	LWP	RWP
18	0.18	0.20
19	0.17	0.21
20	0.11	0.18
21	0.17	0.13
22	0.11	0.12
23	0.09	0.18
24	0.11	0.10
25	0.10	0.10
26	0.08	0.09

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.3104
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=1.048 df=16

How big is the difference?
Mean ± SEM of LWP. 0.1244 ± 0.01271 N=9
Mean ± SEM of RWP. 0.1456 ± 0.01564 N=9
Difference between means -0.02111 ± 0.02015
95% confidence interval -0.02161 to 0.06384
R squared 0.06418

F test to compare variances
F,DFn, Dfd 1.516, 8, 8
P value 0.2848
Are variances significantly different? No

Figure B-12: Rut Depth Scattering for Kraton Westbound Driving Lane.

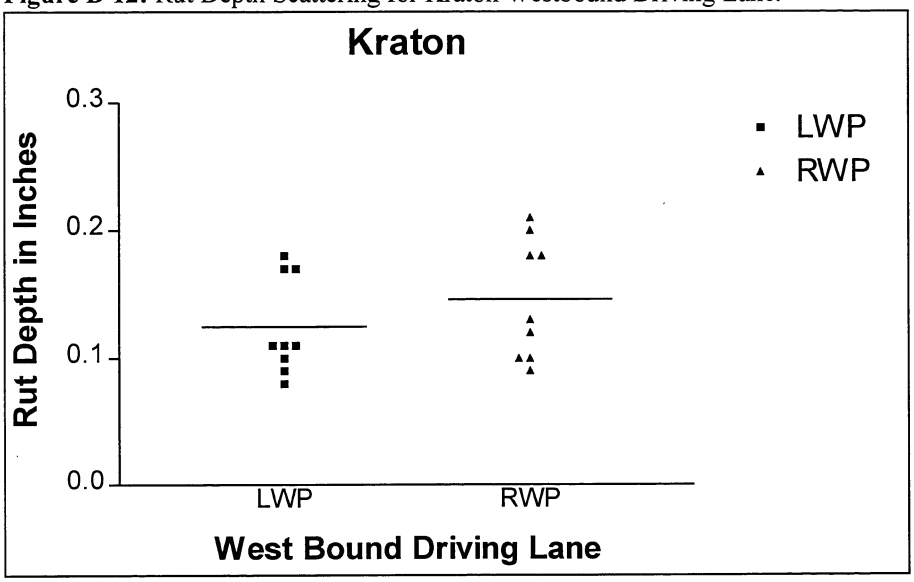


Table 37: Kraton Westbound Passing Lane
Rut Depth in Inches:

Station #	LWP	RWP
18.	0.09	0.16
19	0.07	0.10
20	0.06	0.13
21	0.10	0.08
22	0.04	0.03
23	0.07	0.13
24	0.05	0.09
25	0.06	0.08
26	0.07	0.07

Left Wheel Path vs. Right Wheel Path (Rutting)

Unpaired t test
P value 0.0607
Are means significantly different? ($P < 0.05$) No
One- or two-tailed P value? Two-tailed
t, df t=2.018 df=16

How big is the difference?
Mean ± SEM of LWP. 0.06778 ± 0.006186 N=9
Mean ± SEM of RWP. 0.09667 ± 0.01291 N=9
Difference between means -0.02889 ± 0.01432
95% confidence interval -0.001460 to 0.05924
R squared 0.2029

F test to compare variances
F,DFn, Dfd 4.355, 8, 8
P value 0.0263
Are variances significantly different? Yes

Figure B-13: Rut Depth Scattering for Kraton Westbound Passing Lane.

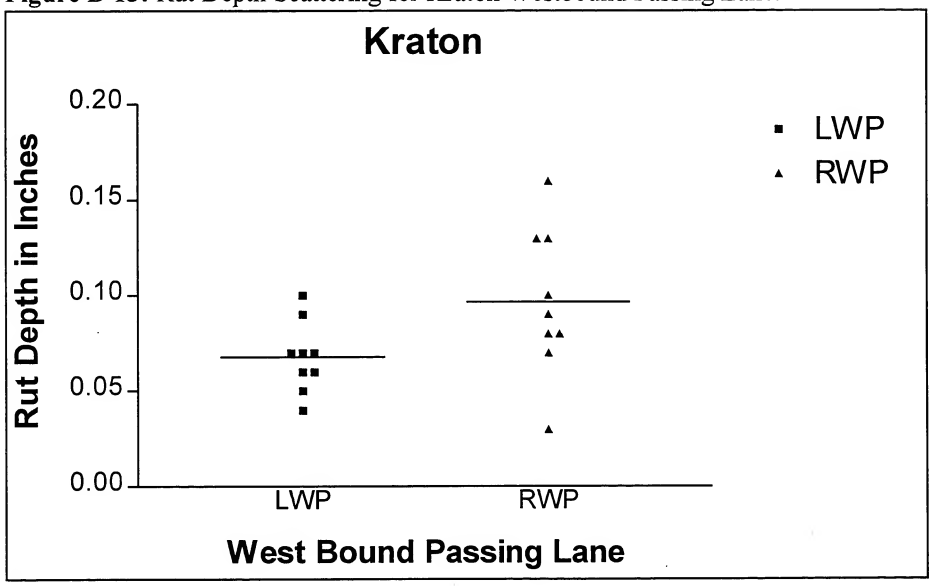


Table 38: Eastbound Driving Lane Rut Depth in Inches:

Eastbound Driving Lane	Polybilt	Exxon	Kraton
LWP	0.21	0.25	0.12
	0.17	0.49	0.20
	0.19	0.50	0.18
	0.20	0.54	0.21
	0.17	0.51	0.16
	0.17	0.68	0.19
	0.10	0.64	0.17
	0.19		0.18
	0.10		0.15
			0.20
RWP	0.18	0.30	0.13
	0.17	0.49	0.19
	0.17	0.56	0.19
	0.19	0.61	0.19
	0.30	0.51	0.16
	0.16	0.63	0.13
	0.15	0.63	0.18
	0.17		0.15
	0.12		0.18
			0.21

Polybilt vs. Kraton (Rutting)

Unpaired t test
P value 0.9512
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=0.06164 df=36

How big is the difference?
Mean ± SEM of Polybilt. 0.1728 ± 0.01044 N=18
Mean ± SEM of Kraton. 0.1735 ± 0.005950 N=20
Difference between means -0.0007222 ± 0.01172
95% confidence interval -0.02305 to 0.02450
R squared 0.0001055

F test to compare variances
F,DFn, Dfd 2.771, 17, 19
P value 0.0173
Are variances significantly different? Yes

Polybilt vs. Exxon (Rutting)

Unpaired t test
P value P<0.0001
Are means significantly different? (P < 0.05) Yes
One- or two-tailed P value? Two-tailed
t, df t=11.24 df=30

How big is the difference?
Mean ± SEM of Polybilt. 0.1728 ± 0.01044 N=18
Mean ± SEM of Exxon. 0.5243 ± 0.03296 N=14
Difference between means -0.3515 ± 0.03128
95% confidence interval 0.2876 to 0.4154
R squared 0.8081

F test to compare variances
F,DFn, Dfd 7.751, 13, 17
P value P<0.0001
Are variances significantly different? Yes

Kraton vs. Exxon (Rutting)

Unpaired t test
P value P<0.0001
Are means significantly different? (P < 0.05) Yes
One- or two-tailed P value? Two-tailed
t, df t=12.39 df=32

How big is the difference?
Mean ± SEM of Exxon. 0.5243 ± 0.03296 N=14
Mean ± SEM of Kraton. 0.1735 ± 0.005950 N=20
Difference between means 0.3508 ± 0.02831
95% confidence interval -0.4085 to -0.2931
R squared 0.8275

F test to compare variances
F,DFn, Dfd 21.48, 13, 19
P value P<0.0001
Are variances significantly different? Yes

Figure B-14: Rut Depth Scattering for Eastbound Driving Lane.

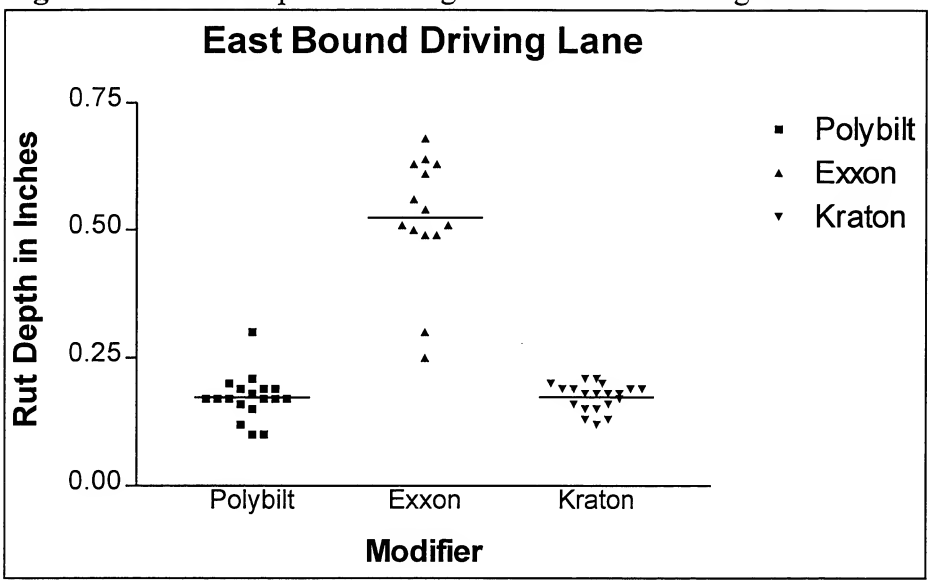


Table 39: Eastbound Passing Lane Rut Depth in Inches:

Eastbound Passing Lane	Polybilt	Exxon	Kraton
LWP	0.11	0.06	0.07
	0.05	0.09	0.08
	0.07	0.09	0.06
	0.08	0.12	0.06
	0.07	0.11	0.09
	0.08	0.13	0.07
	0.08	0.12	0.03
	0.11		0.10
	0.07		0.08
			0.08
RWP	0.08	0.06	0.04
	0.05	0.05	0.08
	0.08	0.09	0.04
	0.08	0.09	0.04
	0.08	0.08	0.02
	0.07	0.06	0.04
	0.09	0.12	0.06
	0.12		0.07
	0.09		0.09
			0.06

Polybilt vs. Kraton (Rutting)

Unpaired t test
P value 0.0097
Are means significantly different? ($P < 0.05$) Yes
One- or two-tailed P value? Two-tailed
t, df t=2.731 df=36

How big is the difference?
Mean ± SEM of Polybilt. 0.08111 ± 0.004345 N=18
Mean ± SEM of Kraton. 0.0630 ± 0.004926 N=20
Difference between means 0.01811 ± 0.006631
95% confidence interval -0.03157 to -0.004653
R squared 0.1716

F test to compare variances
F,DFn, Dfd 1.428, 19, 17
P value 0.2325
Are variances significantly different? No

Polybilt vs. Exxon (Rutting)

Unpaired t test
P value 0.2356
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=1.210 df=30

How big is the difference?
Mean ± SEM of Polybilt. 0.08111 ± 0.004345 N=18
Mean ± SEM of Exxon. 0.09071 ± 0.007068 N=14
Difference between means -0.009603 ± 0.007934
95% confidence interval -0.006598 to 0.02580
R squared 0.04656

F test to compare variances
F,DFn, Dfd 2.058, 13, 17
P value 0.0818
Are variances significantly different? No

Kraton vs. Exxon (Rutting)

Unpaired t test
P value 0.0022
Are means significantly different? (P < 0.05) Yes
One- or two-tailed P value? Two-tailed
t, df t=3.325 df=32

How big is the difference?
Mean ± SEM of Exxon. 0.09071 ± 0.007068 N=14
Mean ± SEM of Kraton. 0.0630 ± 0.004926 N=20
Difference between means 0.02771 ± 0.008336
95% confidence interval -0.04470 to -0.01073
R squared 0.2567

F test to compare variances
F,DFn, Dfd 1.441, 13, 19
P value 0.2281
Are variances significantly different? No

Figure B-15: Rut Depth Scattering for Eastbound Passing Lane.

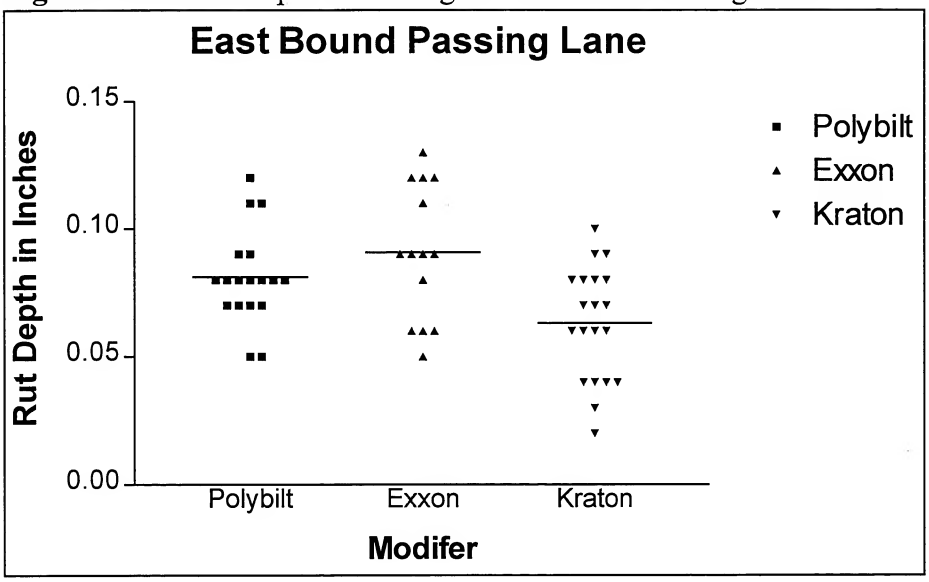


Table 40: Westbound Driving Lane Rut Depth in Inches:

Westbound Driving Lane	Polybilt	Exxon	Kraton
LWP	0.19	0.53	0.18
	0.22	0.59	0.17
	0.12	0.56	0.11
	0.20	0.54	0.17
	0.14	0.49	0.11
	0.12	0.45	0.09
	0.09	0.41	0.11
	0.12		0.10
	0.12		0.08
	0.13		
RWP	0.24	0.57	0.20
	0.20	0.60	0.21
	0.24	0.57	0.18
	0.17	0.50	0.13
	0.20	0.53	0.12
	0.14	0.51	0.18
	0.16	0.54	0.10
	0.14		0.10
	0.17		0.09
	0.15		

Polybilt vs. Kraton (Rutting)

Unpaired t test
P value 0.0531
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=2.000 df=36

How big is the difference?
Mean ± SEM of Polybilt. 0.1630 ± 0.009682 N=20
Mean ± SEM of Kraton. 0.1350 ± 0.01011 N=18
Difference between means 0.02800 ± 0.01400
95% confidence interval -0.05642 to 0.0004166
R squared 0.09997

F test to compare variances
F,DFn, Dfd 1.020, 19, 17
P value 0.4871
Are variances significantly different? No

Polybilt vs. Exxon (Rutting)

Unpaired t test
P value P<0.0001
Are means significantly different? (P < 0.05) Yes
One- or two-tailed P value? Two-tailed
t, df t=22.06 df=32

How big is the difference?
Mean ± SEM of Polybilt. 0.1630 ± 0.009682 N=20
Mean ± SEM of Exxon. 0.5279 ± 0.01415 N=14
Difference between means -0.3649 ± 0.01654
95% confidence interval 0.3312 to 0.3986
R squared 0.9383

F test to compare variances
F,DFn, Dfd 1.495, 13, 19
P value 0.2070
Are variances significantly different? No

Kraton vs. Exxon (Rutting)

Unpaired t test
P value P<0.0001
Are means significantly different? (P < 0.05) Yes
One- or two-tailed P value? Two-tailed
t, df t=23.21 df=30

How big is the difference?
Mean ± SEM of Exxon. 0.5279 ± 0.01415 N=14
Mean ± SEM of Kraton. 0.1350 ± 0.01011 N=18
Difference between means 0.3929 ± 0.01693
95% confidence interval -0.4274 to -0.3583
R squared 0.9472

F test to compare variances
F,DFn, Dfd 1.525, 13, 17
P value 0.2050
Are variances significantly different? No

Figure B-16: Rut Depth Scattering for Westbound Driving Lane.

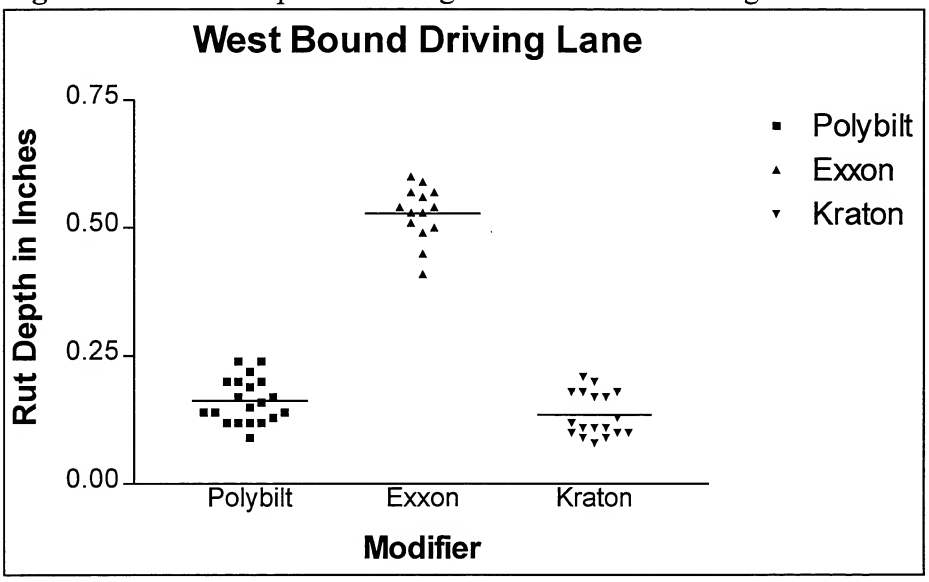


Table 41: Westbound Passing Lane Rut Depth in Inches:

Westbound Passing Lane	Polybilt	Exxon	Kraton
LWP	0.06	0.08	0.09
	0.09	0.08	0.07
	0.06	0.12	0.06
	0.07	0.09	0.10
	0.03	0.14	0.04
	0.05	0.09	0.07
	0.07	0.15	0.05
	0.04		0.06
	0.07		0.07
	0.08		
RWP	0.07	0.09	0.16
	0.07	0.13	0.10
	0.08	0.20	0.13
	0.09	0.10	0.08
	0.03	0.15	0.03
	0.08	0.10	0.13
	0.14	0.13	0.09
	0.01		0.08
	0.07		0.07
	0.15		

Polybilt vs. Kraton (Rutting)

Unpaired t test
P value 0.2815
Are means significantly different? (P < 0.05) No
One- or two-tailed P value? Two-tailed
t, df t=1.093 df=36

How big is the difference?
Mean ± SEM of Polybilt. 0.0705 ± 0.007380 N=20
Mean ± SEM of Kraton. 0.08222 ± 0.007778 N=18
Difference between means -0.01172 ± 0.01072
95% confidence interval -0.01004 to 0.03348
R squared 0.03214

F test to compare variances
F,DFn, Dfd 1.000, 19, 17
P value 0.5033
Are variances significantly different? No

Polybilt vs. Exxon (Rutting)

Unpaired t test
P value 0.0003
Are means significantly different? (P < 0.05) Yes
One- or two-tailed P value? Two-tailed
t, df t=4.044 df=32

How big is the difference?
Mean ± SEM of Polybilt. 0.0705 ± 0.007380 N=20
Mean ± SEM of Exxon. 0.1179 ± 0.009209 N=14
Difference between means -0.04736 ± 0.01171
95% confidence interval 0.02350 to 0.07122
R squared 0.3383

F test to compare variances
F,DFn, Dfd 1.090, 13, 19
P value 0.4210
Are variances significantly different? No

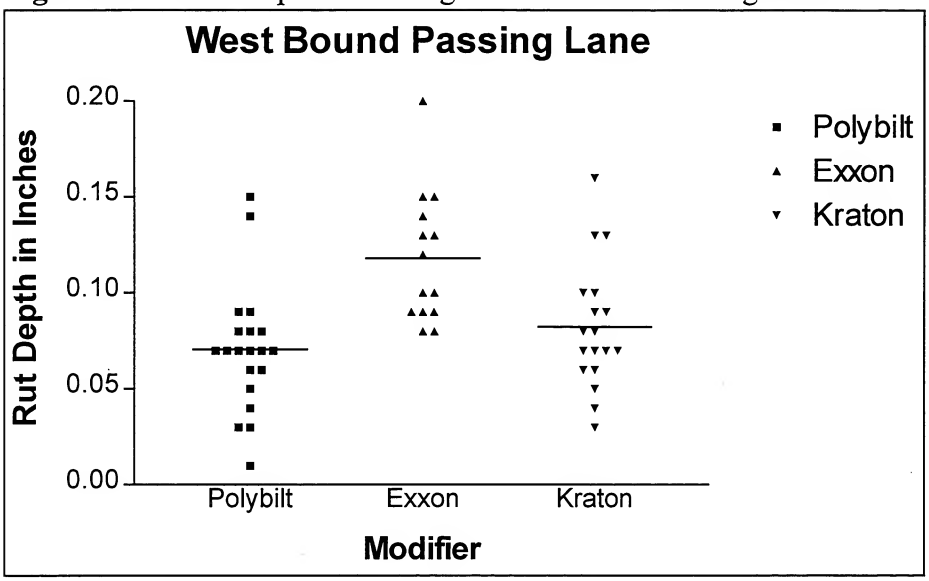
Kraton vs. Exxon (Rutting)

Unpaired t test
P value 0.0058
Are means significantly different? (P < 0.05) Yes
One- or two-tailed P value? Two-tailed
t, df t=2.973 df=30

How big is the difference?
Mean ± SEM of Exxon. 0.1179 ± 0.009209 N=14
Mean ± SEM of Kraton. 0.08222 ± 0.007778 N=18
Difference between means 0.03563 ± 0.01199
95% confidence interval -0.06011 to -0.01116
R squared 0.2275

F test to compare variances
F,DFn, Dfd 1.090, 13, 17
P value 0.4258
Are variances significantly different? No

Figure B-17: Rut Depth Scattering for Westbound Passing Lane.



APPENDIX C

GRAPHS

Figure C1.1.

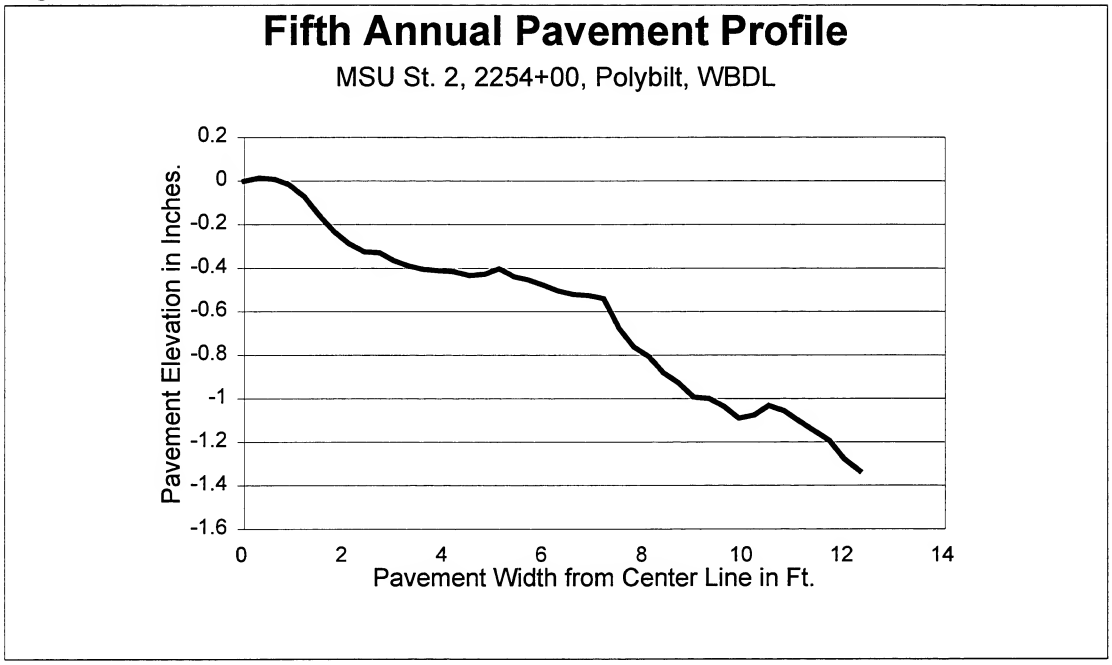


Figure C1.2.

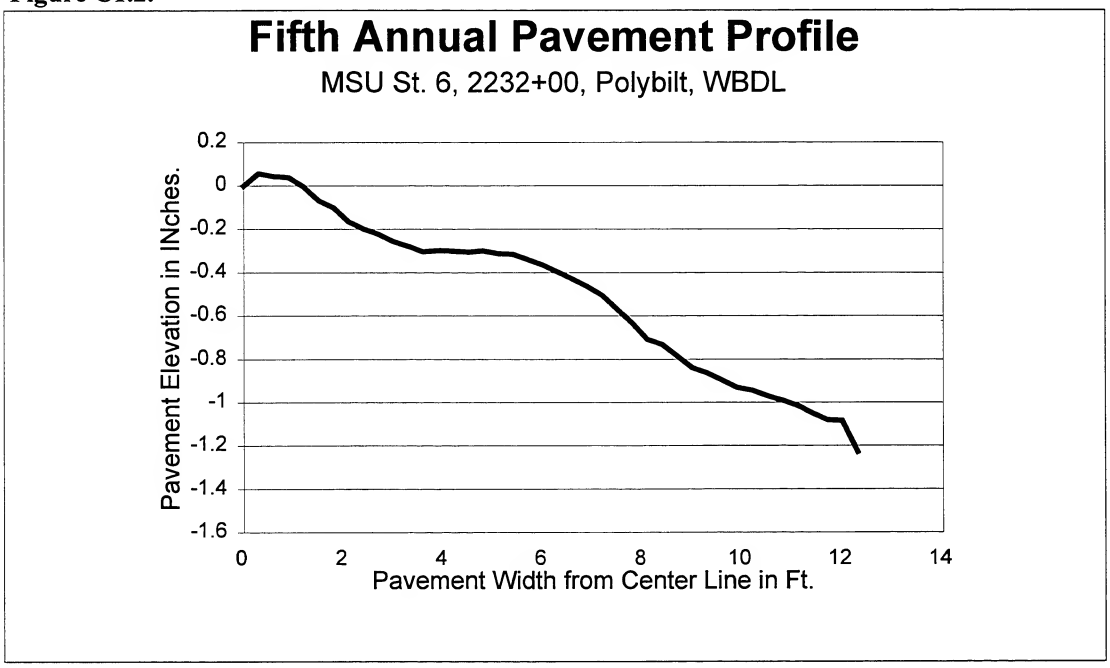


Figure C1.3.

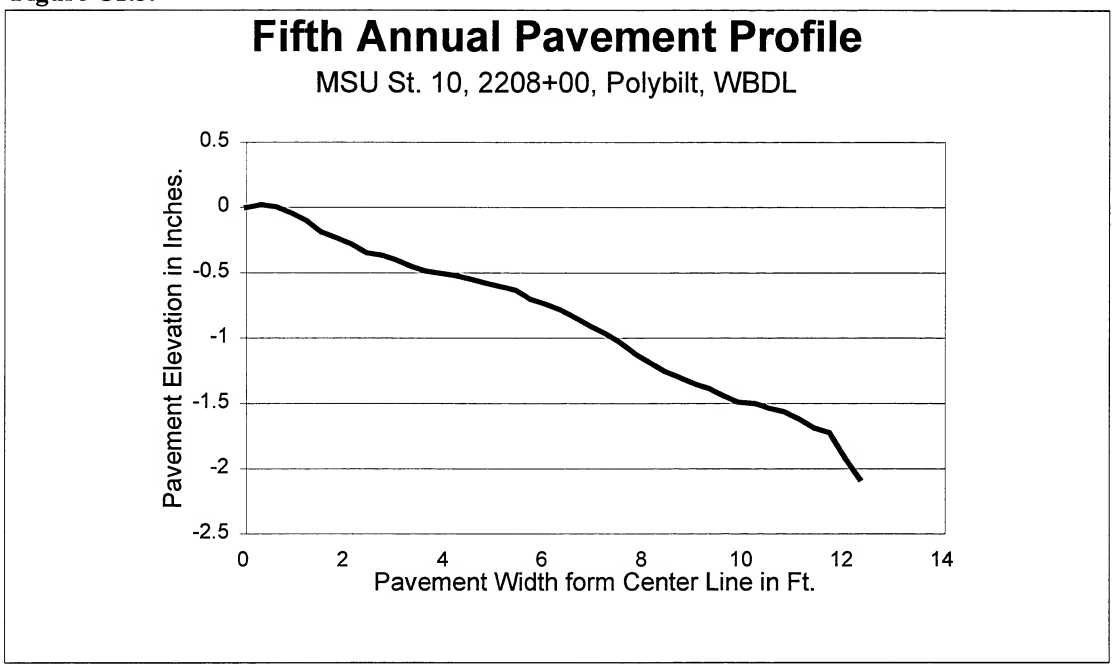


Figure C1.4.

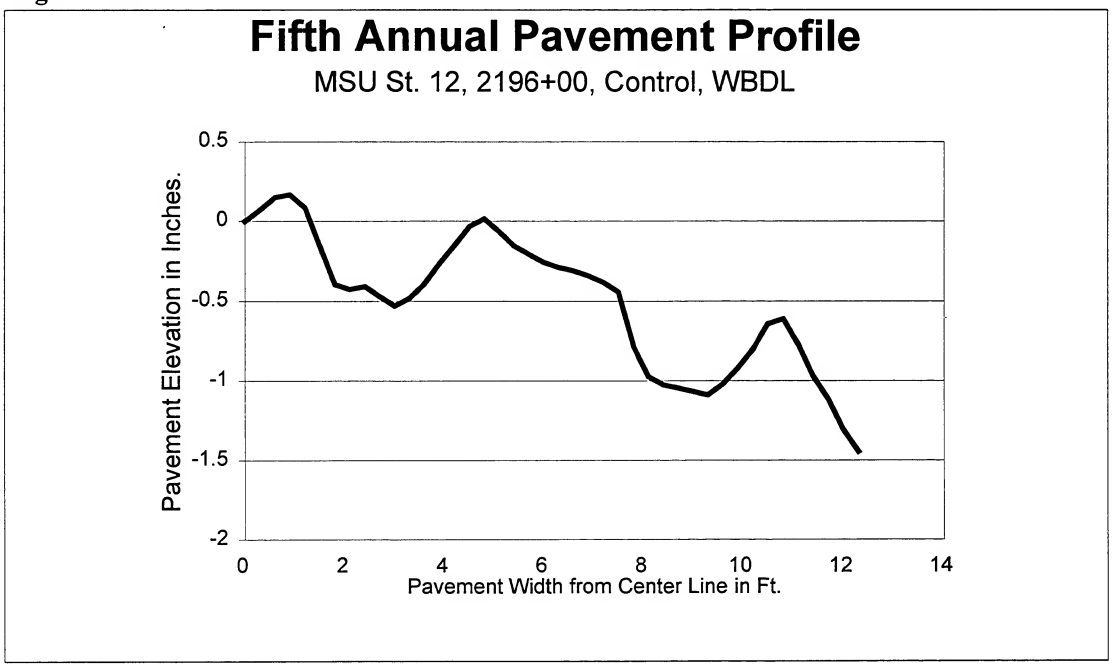


Figure C1.5.

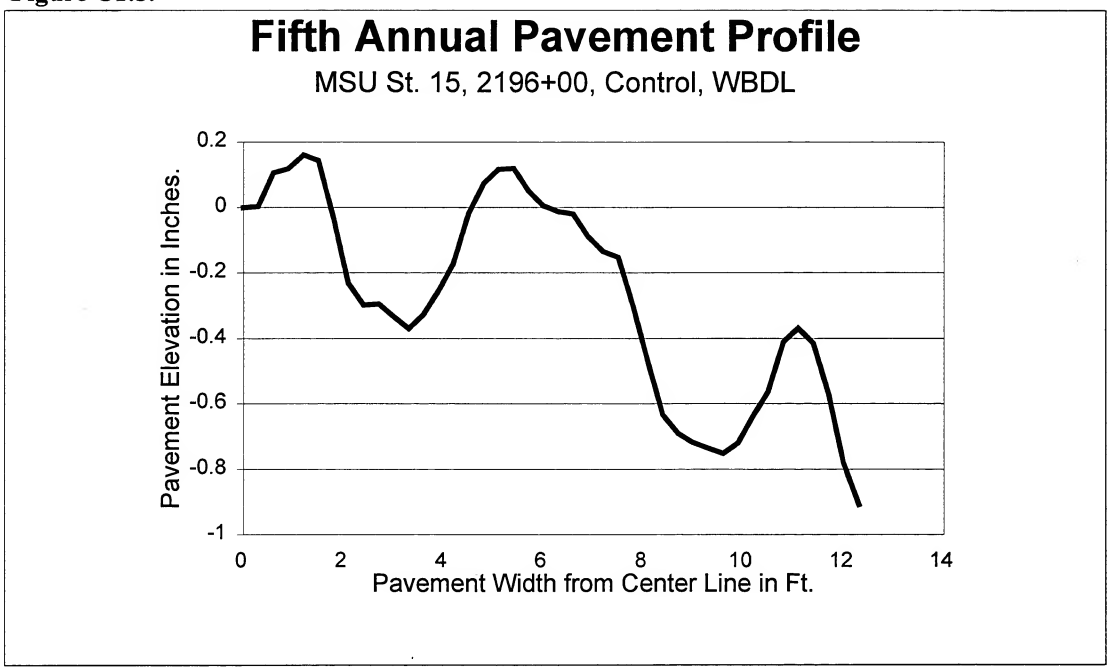


Figure C1.6.

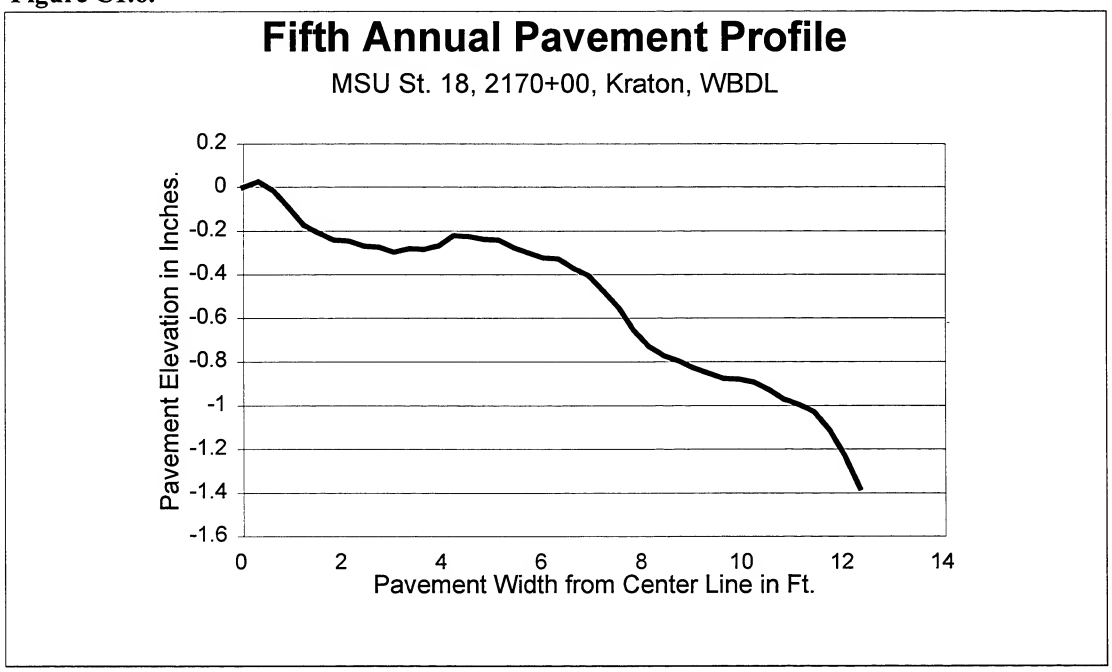


Figure C1.7.

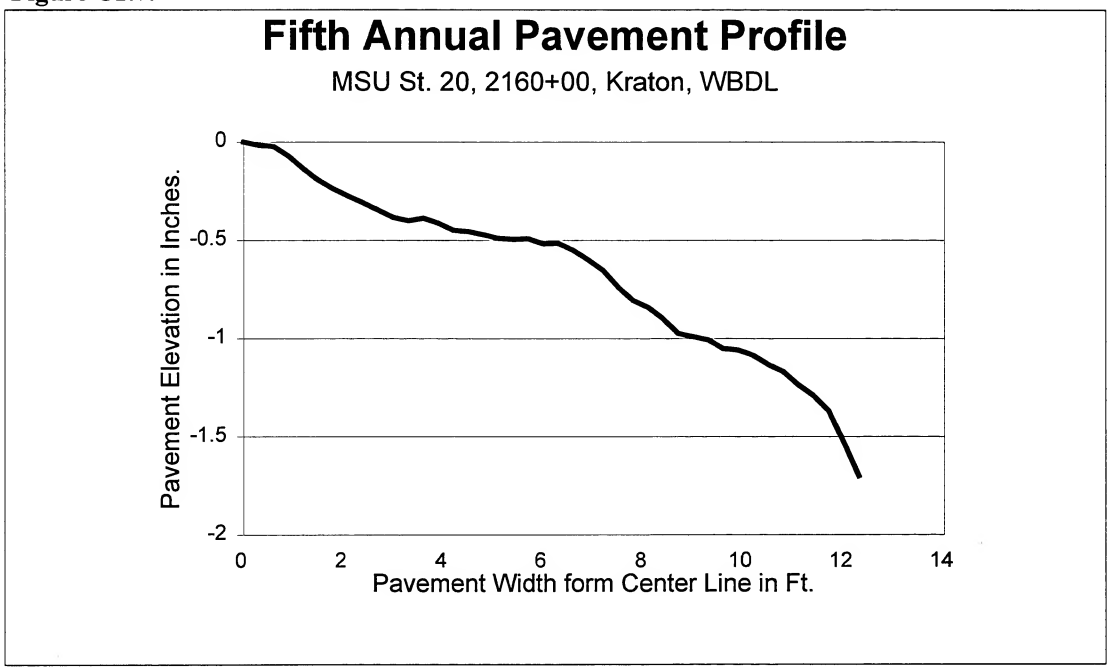


Figure C1.8.

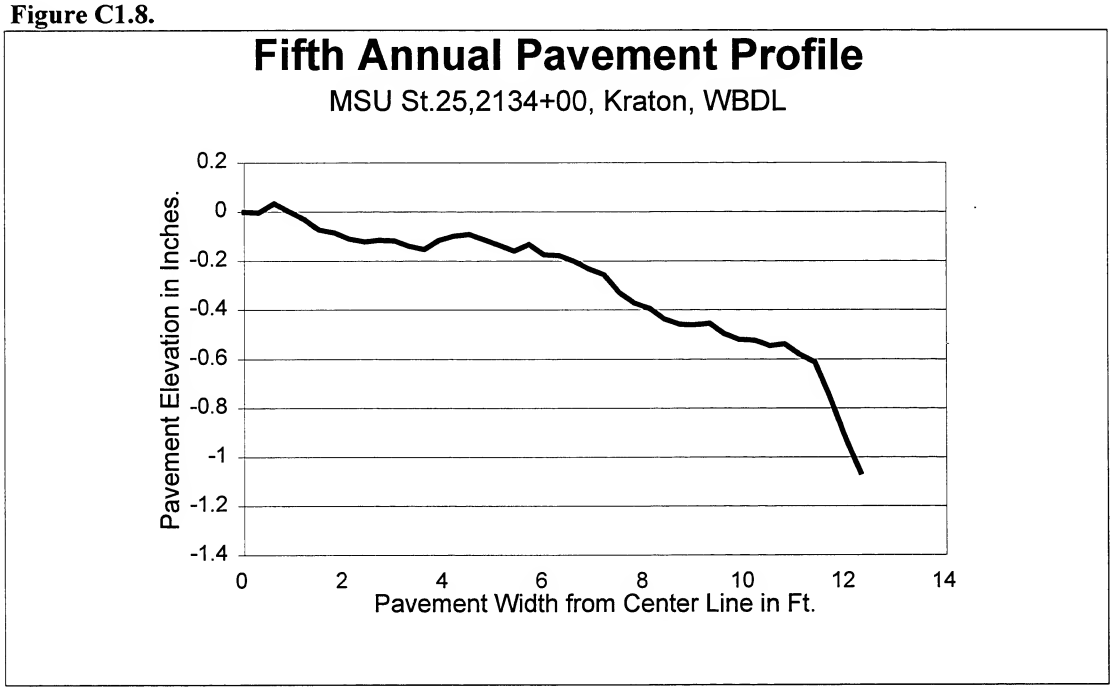


Figure C2.1.

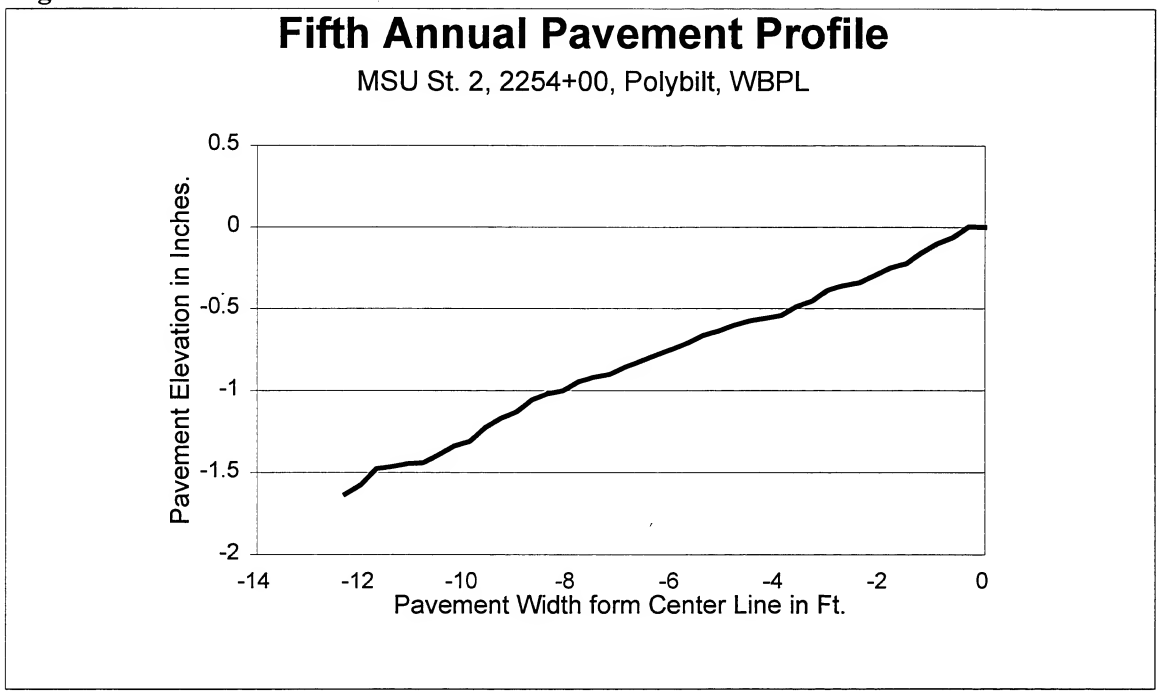


Figure C2.2.

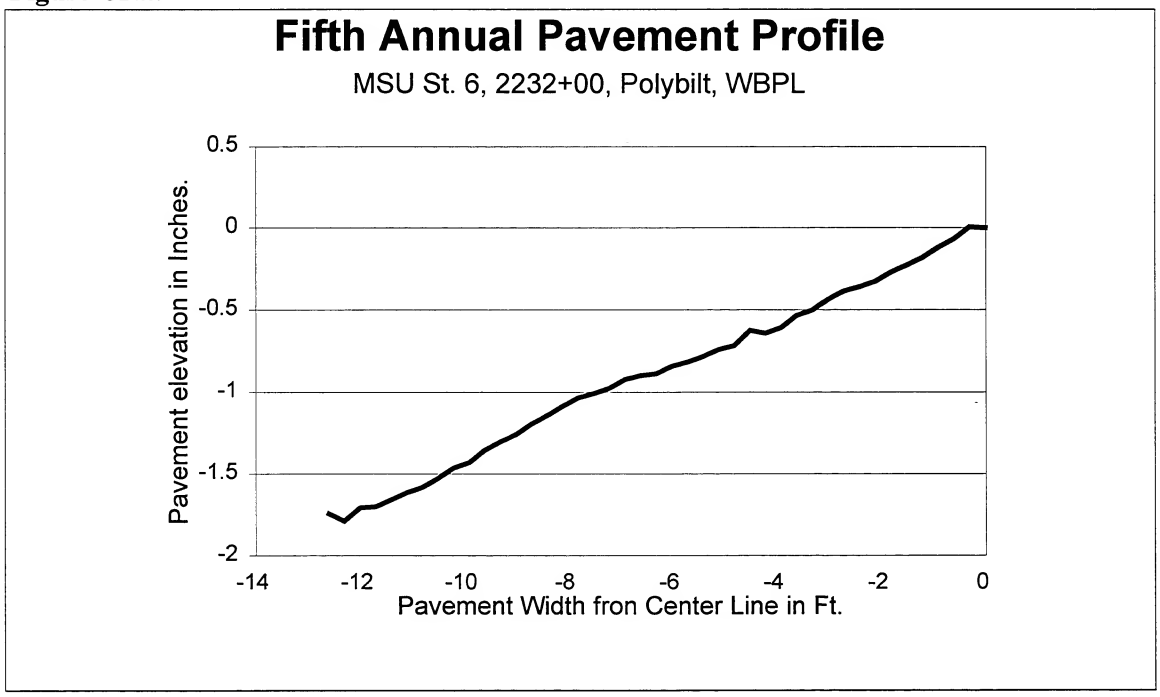


Figure C2.3.

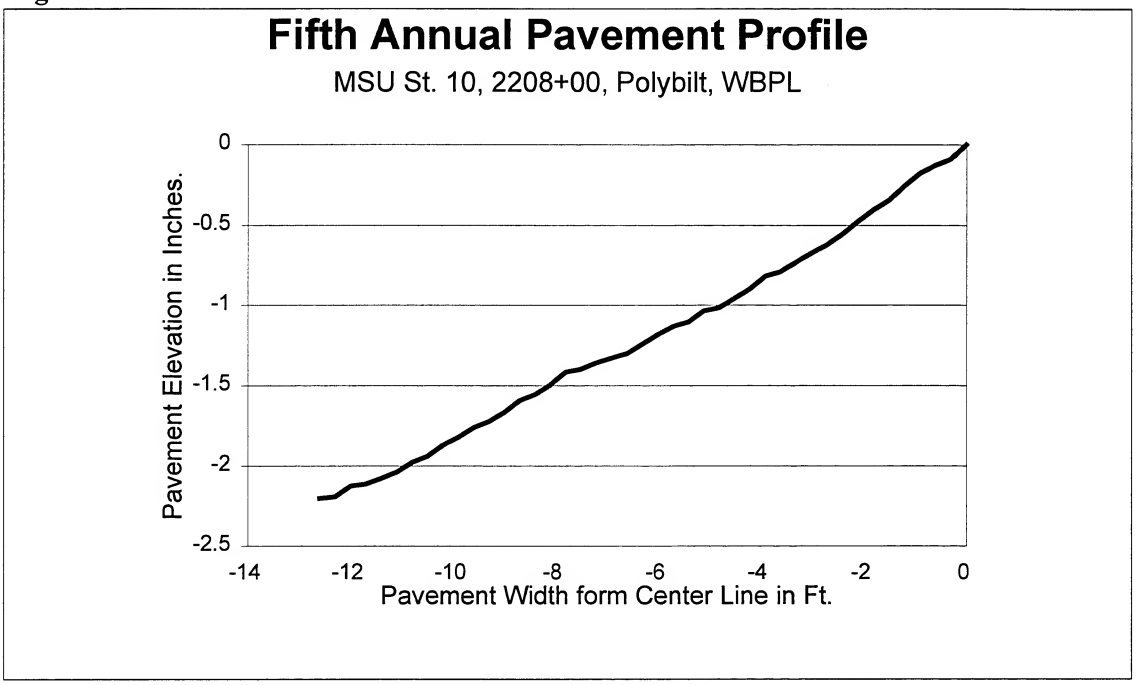


Figure C2.4.

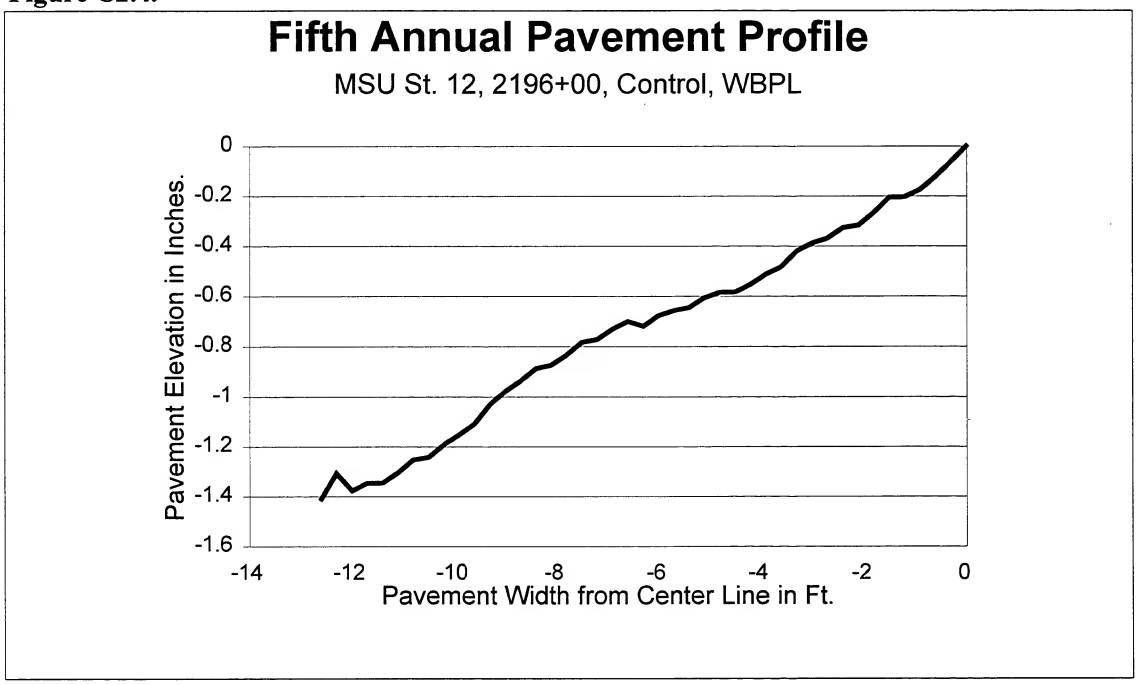


Figure C2.5.

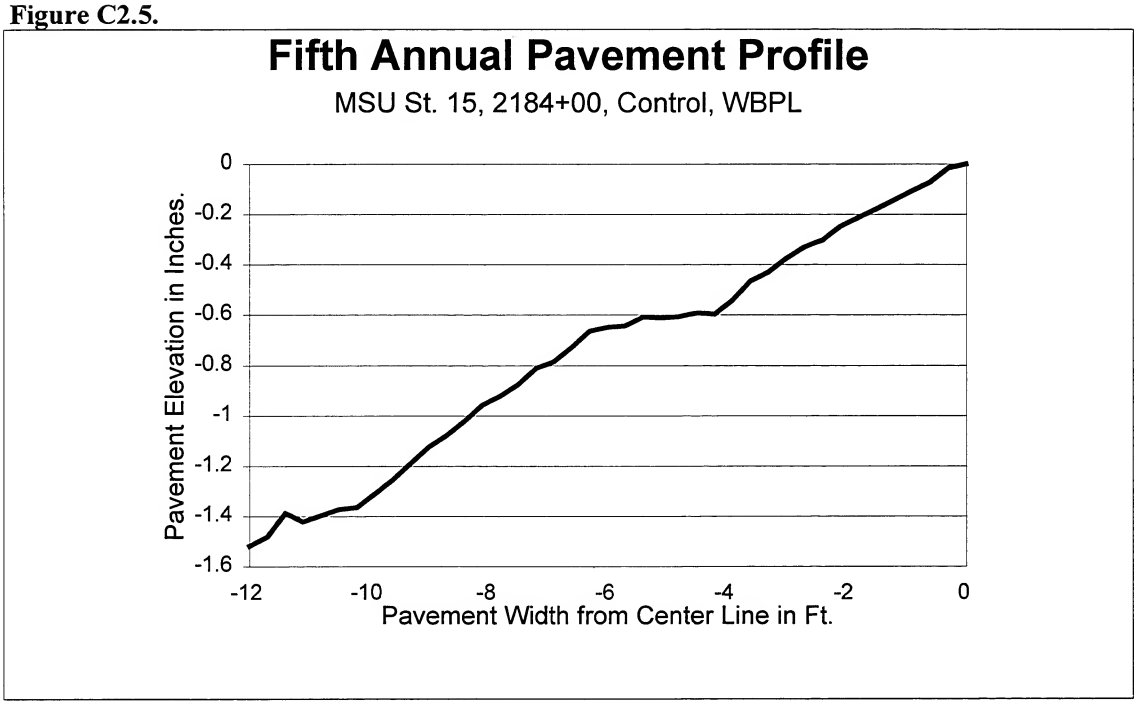


Figure C2.6.

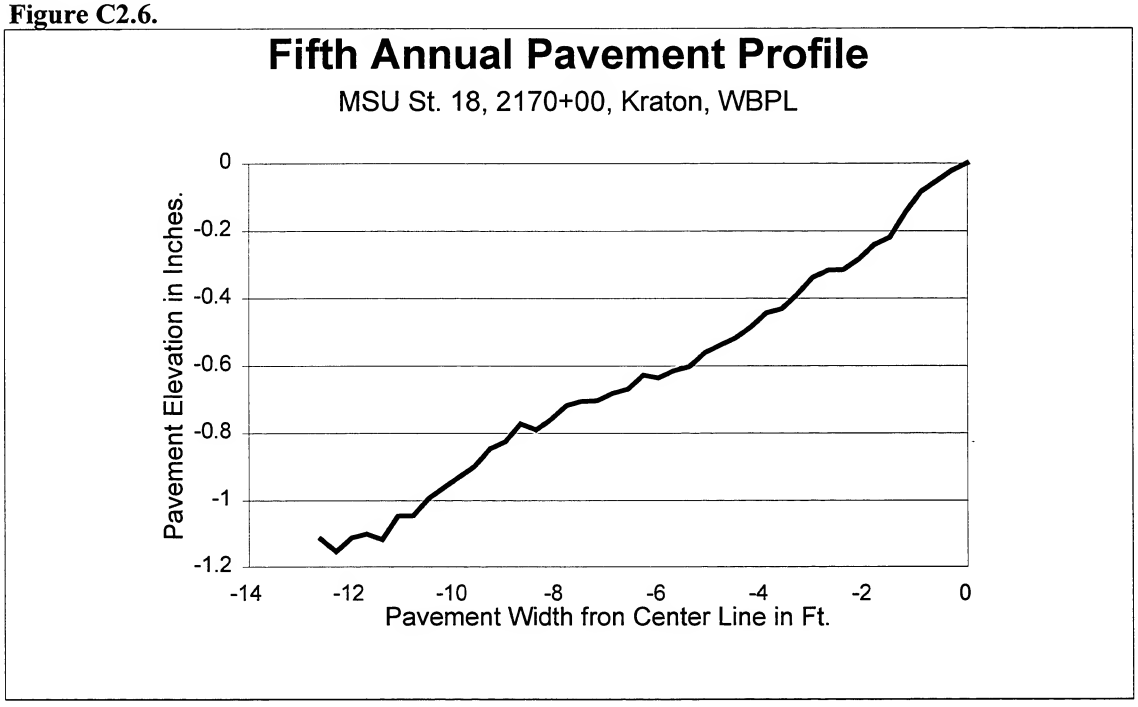


Figure C2.7.

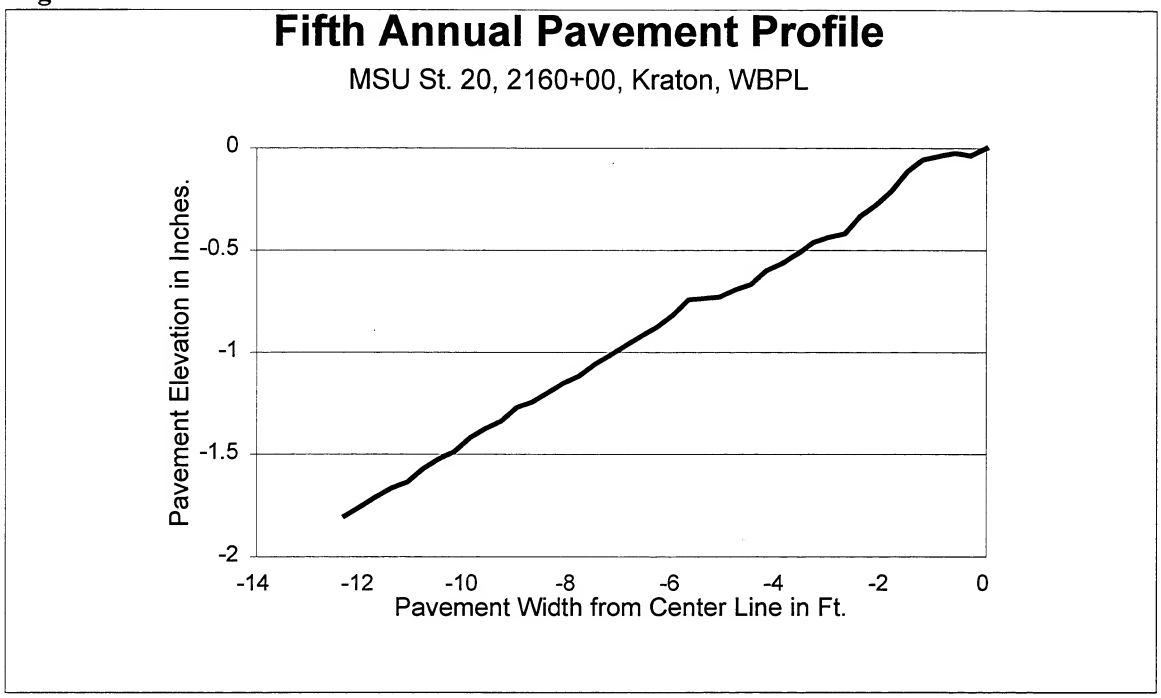


Figure C2.8.

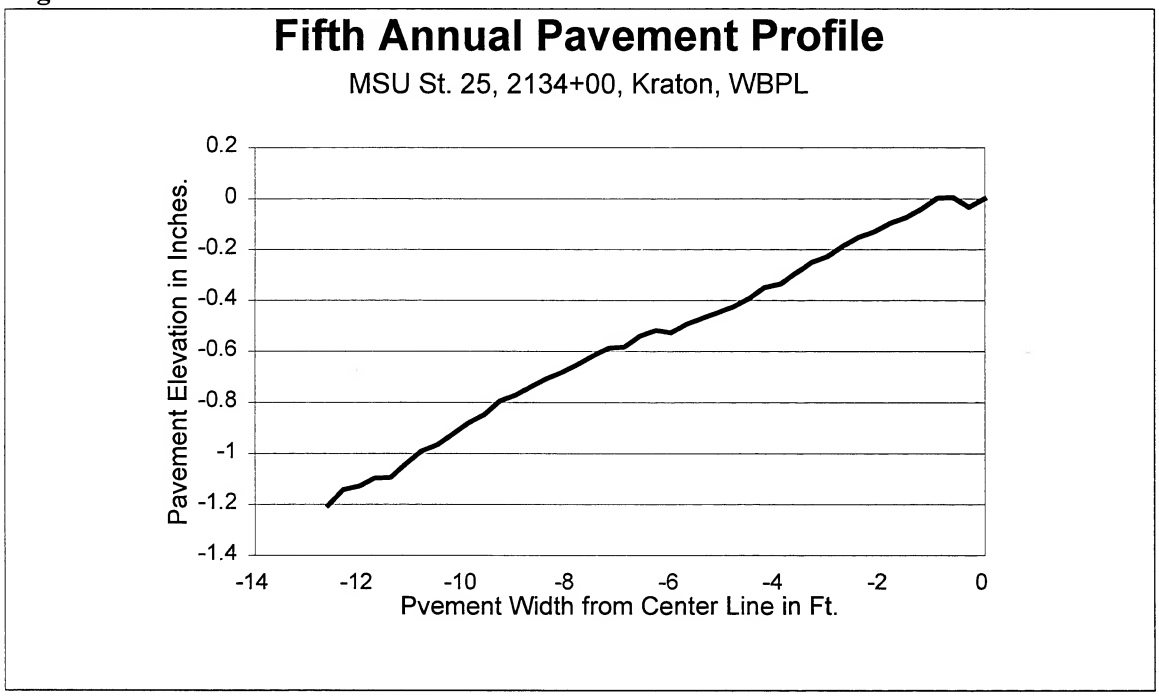


Figure C3.1.

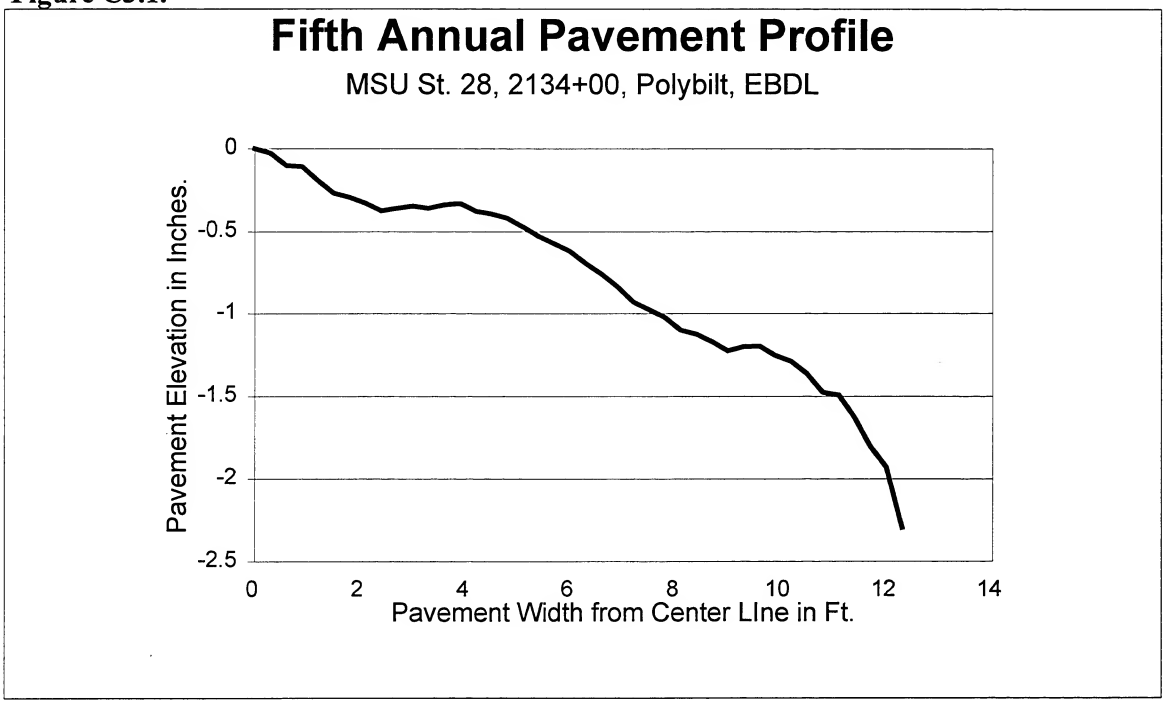


Figure C3.2.

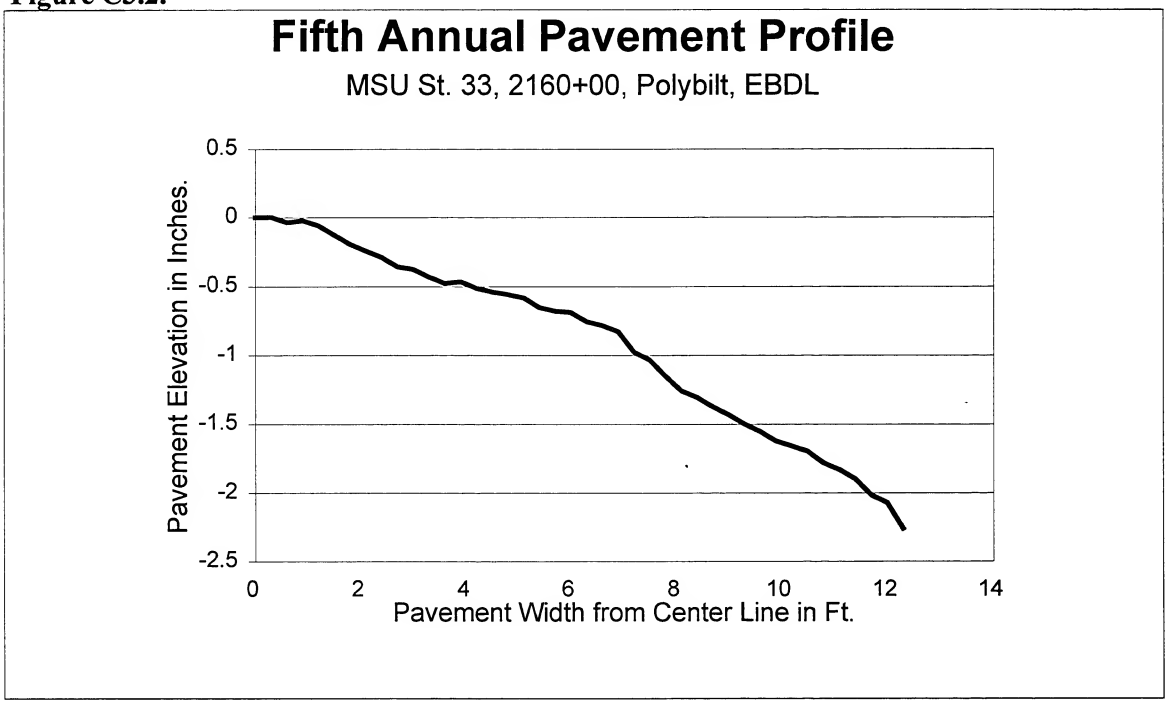


Figure C3.3.

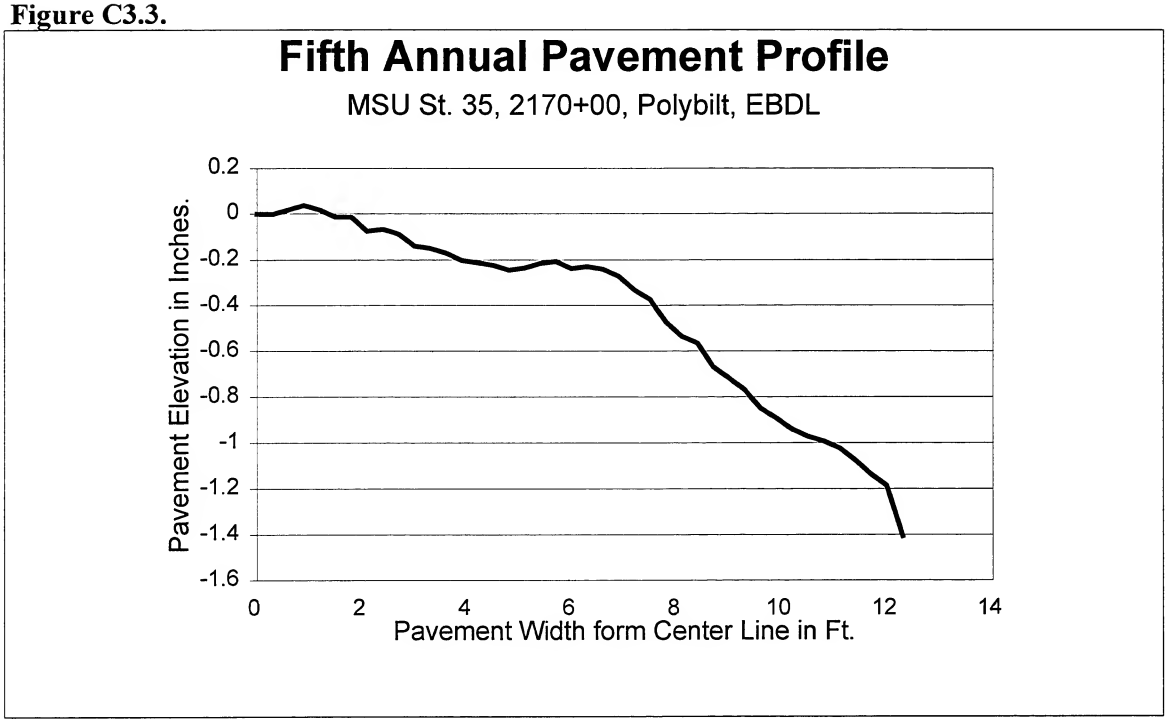


Figure C3.4.

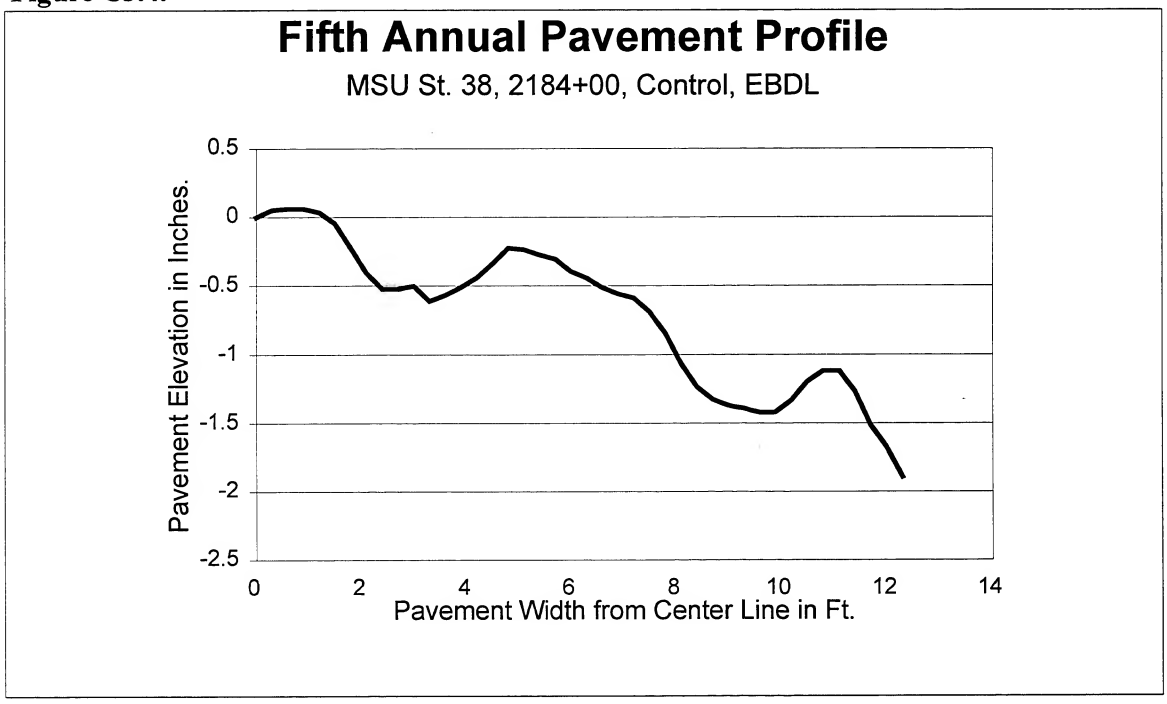


Figure C3.5.

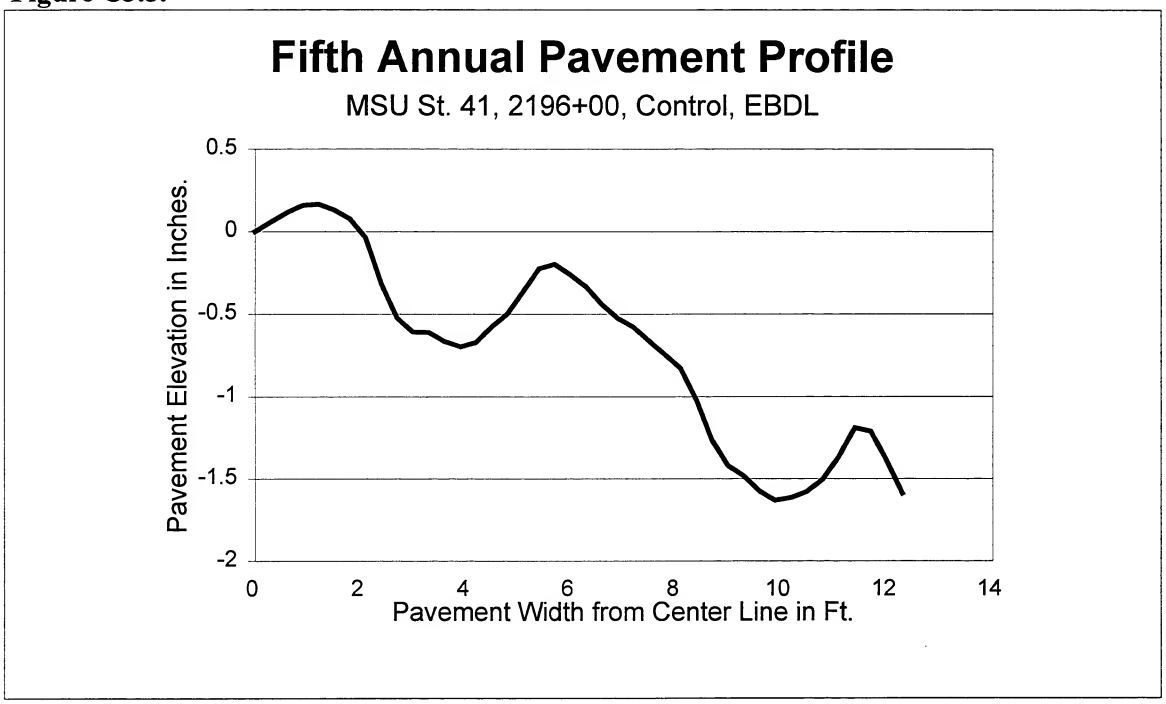


Figure C3.6.

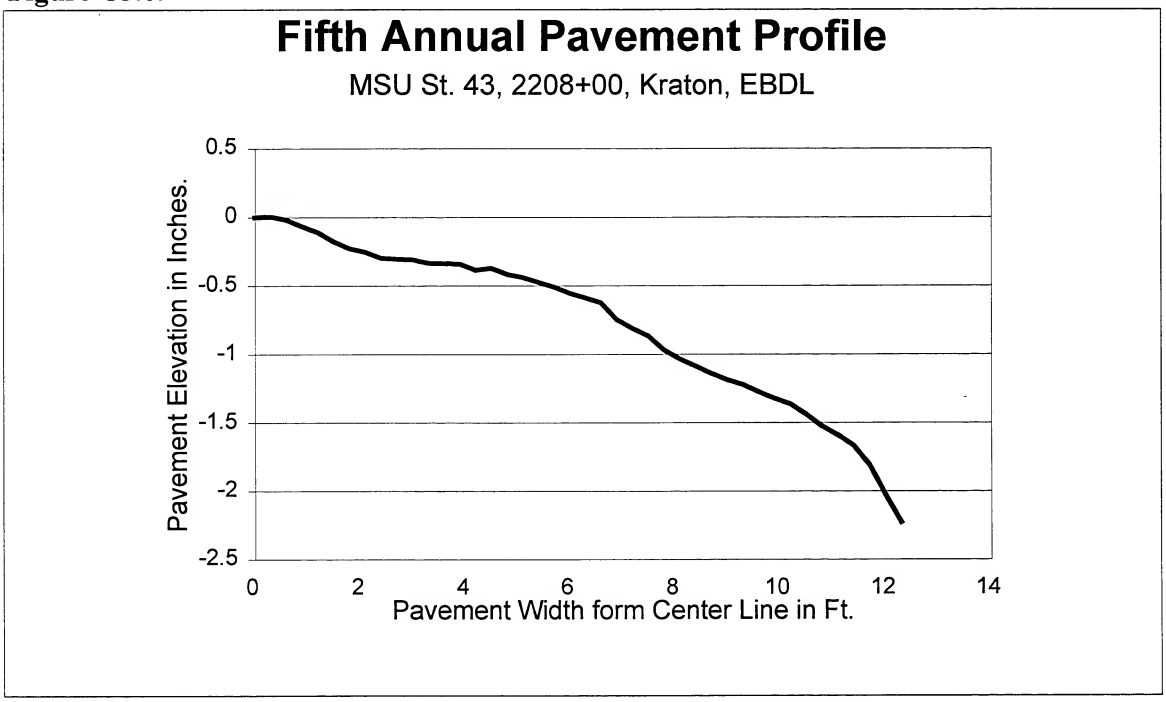


Figure C3.7.

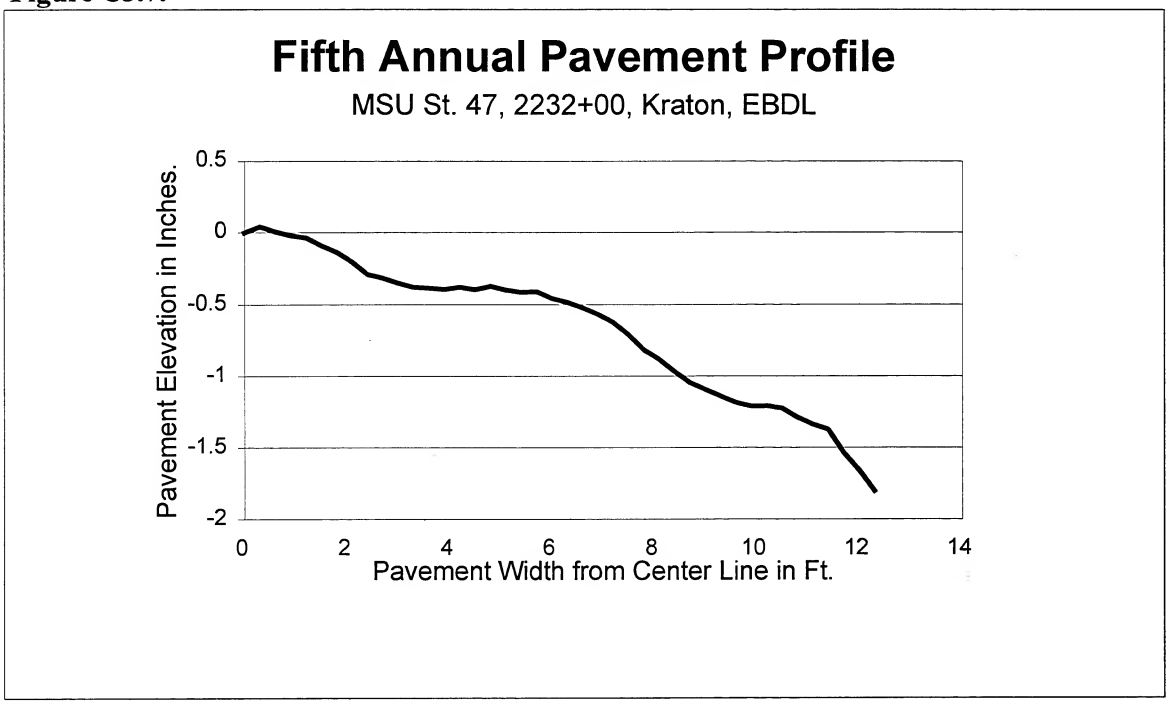


Figure C3.8.

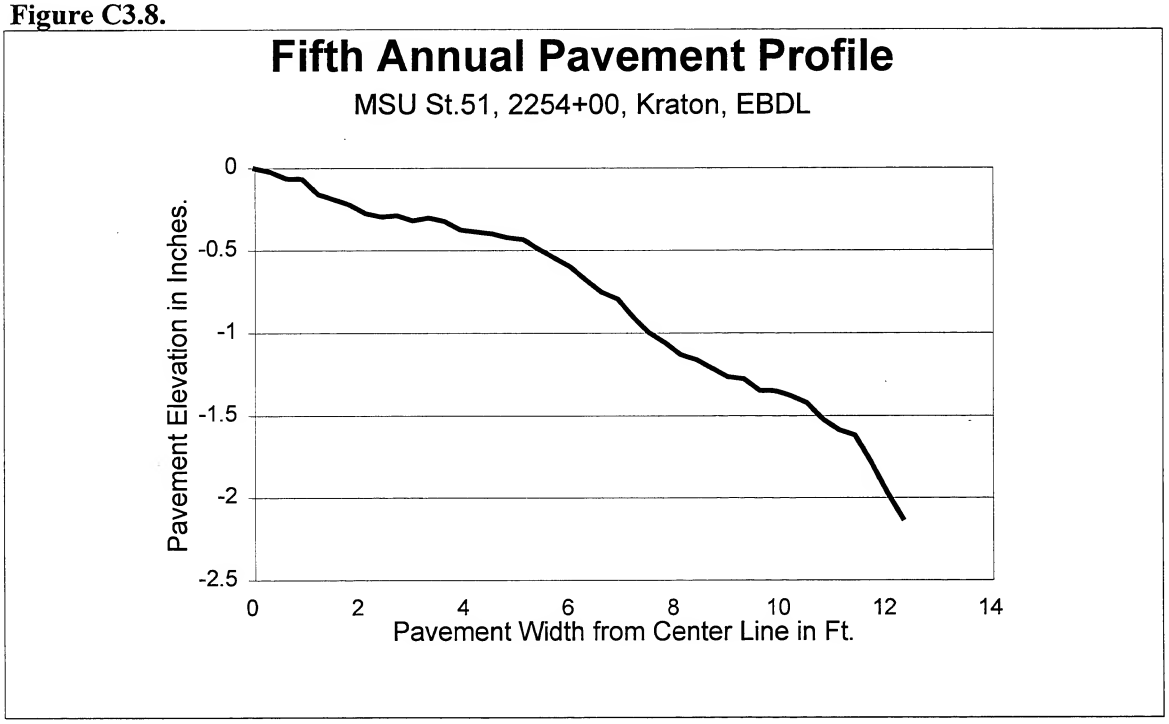


Figure C4.1.

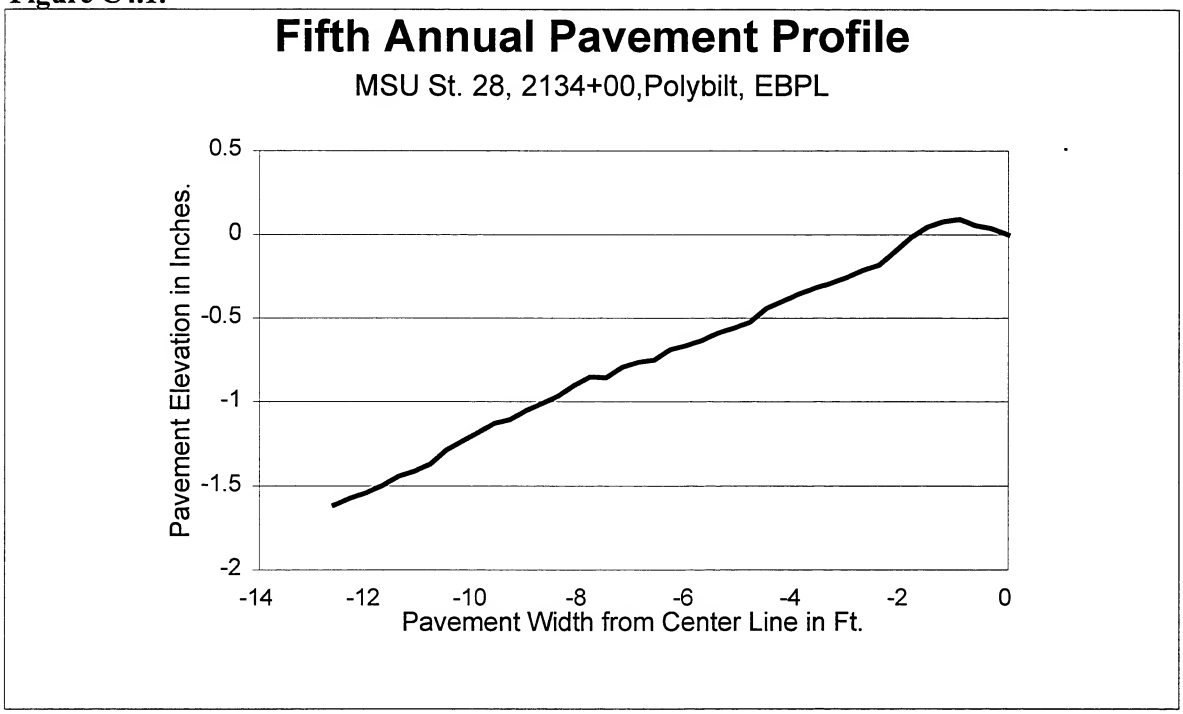


Figure C4.2.

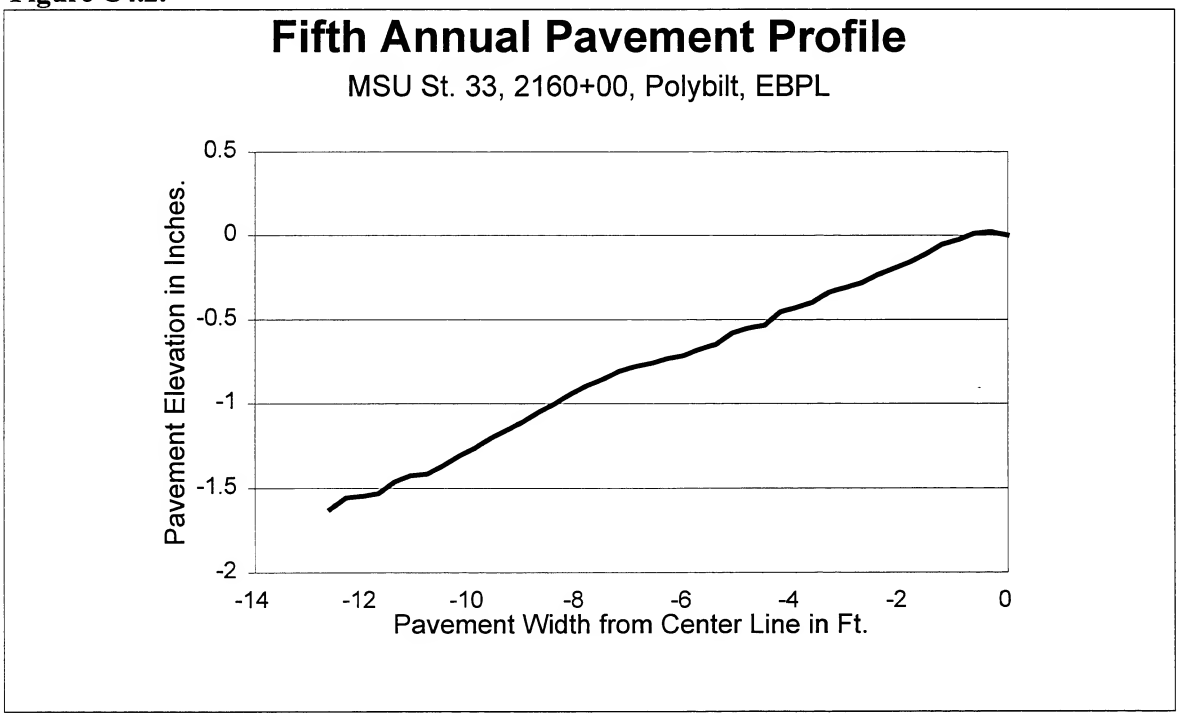


Figure C4.3.

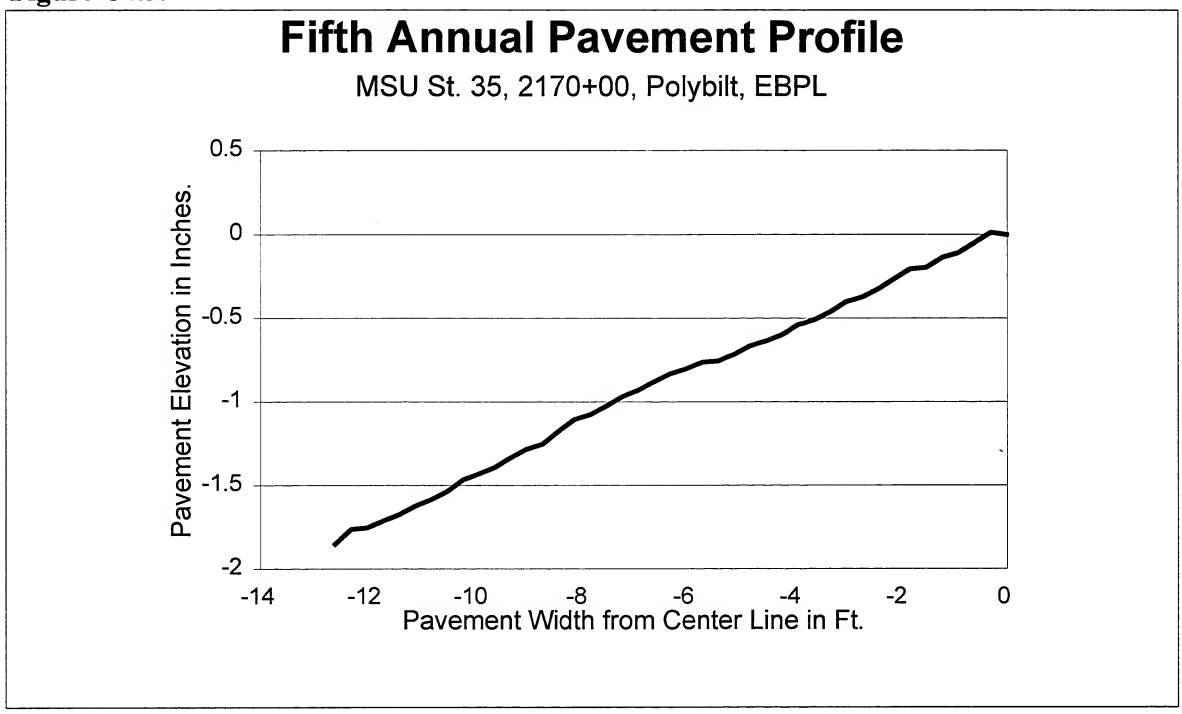


Figure C4.4.

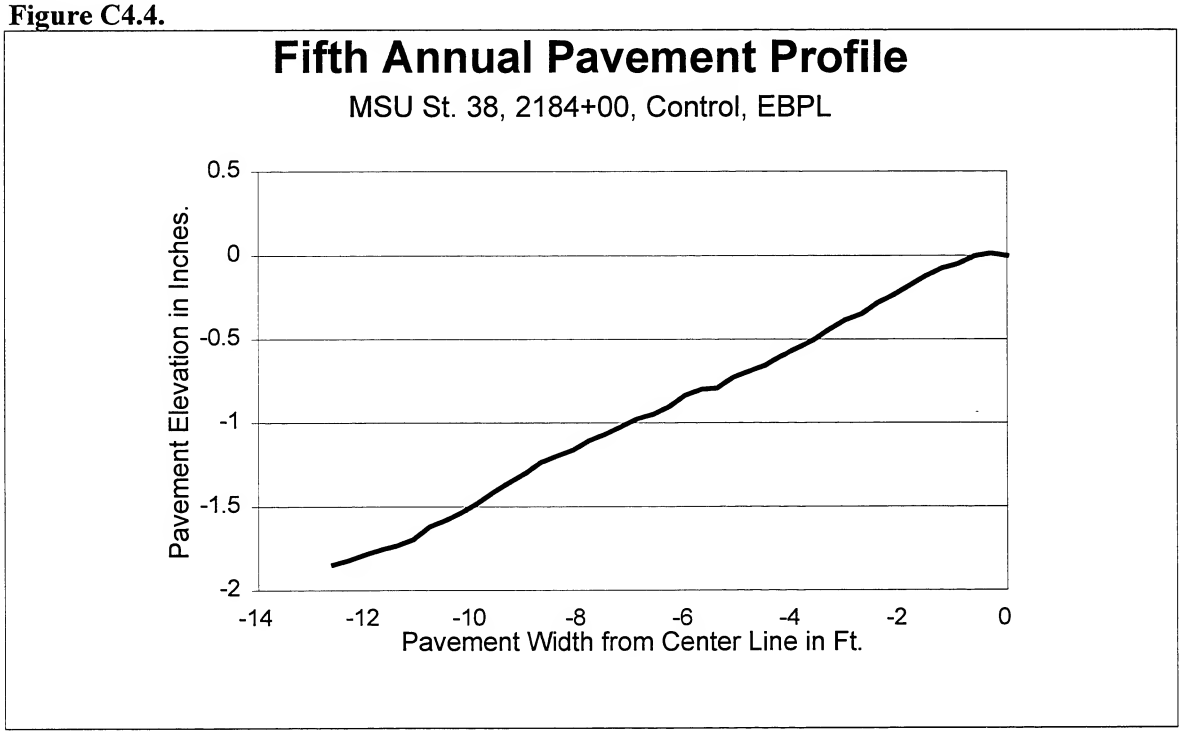


Figure C4.5.

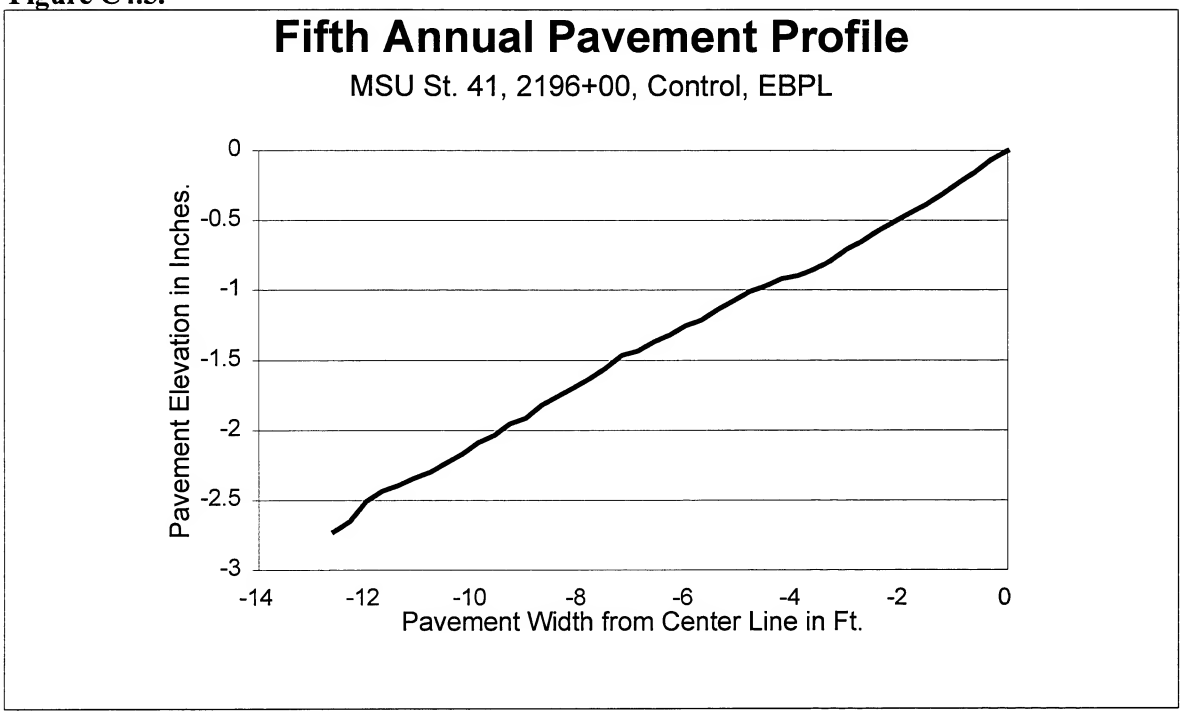
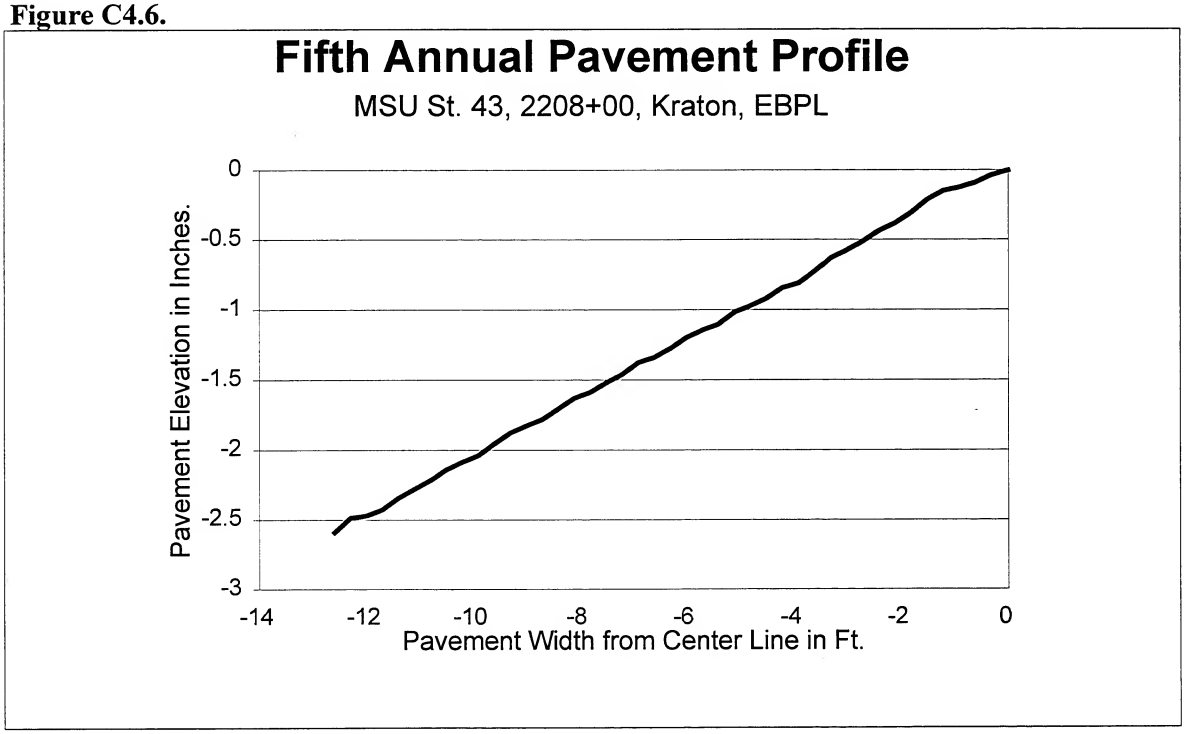


Figure C4.6.



APPENDIX D

TABLES

Table 42.1: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane

2260+00, MSU St. 1

Point	Width	Pavement	Profilograph	Profilograph	Pavement
	Feet	Width (X)	Coordinates	Level (in)	Elevation(Y)
1	0.0	0.0	0.00	0.00	0.00
2	0.3	3.6	0.07	-0.03	0.04
3	0.6	7.2	0.17	-0.05	0.12
4	0.9	10.8	0.23	-0.08	0.15
5	1.2	14.4	0.23	-0.11	0.12
6	1.5	18.0	0.20	-0.14	0.06
7	1.8	21.6	0.15	-0.16	-0.01
8	2.1	25.2	0.06	-0.19	-0.13
9	2.4	28.8	0.03	-0.22	-0.19
10	2.7	32.4	0.06	-0.25	-0.17
11	3.0	36.0	0.08	-0.27	-0.16
12	3.3	39.6	0.11	-0.30	-0.17
13	3.6	43.2	0.13	-0.33	-0.17
14	3.9	46.8	0.16	-0.35	-0.16
15	4.2	50.4	0.19	-0.38	-0.15
16	4.5	54.0	0.23	-0.41	-0.14
17	4.8	57.6	0.27	-0.44	-0.16
18	5.1	61.2	0.28	-0.46	-0.13
19	5.4	64.8	0.33	-0.49	-0.14
20	5.7	68.4	0.35	-0.52	-0.16
21	6.0	72.0	0.36	-0.55	-0.16
22	6.3	75.6	0.39	-0.57	-0.17
23	6.6	79.2	0.40	-0.60	-0.20
24	6.9	82.8	0.40	-0.63	-0.23
25	7.2	86.4	0.40	-0.65	-0.26
26	7.5	90.0	0.39	-0.68	-0.31
27	7.8	93.6	0.37	-0.71	-0.39
28	8.1	97.2	0.32	-0.74	-0.51
29	8.4	100.8	0.23	-0.76	-0.57
30	8.7	104.4	0.19	-0.79	-0.60
31	9.0	108.0	0.19	-0.82	-0.61
32	9.3	111.6	0.21	-0.85	-0.63
33	9.6	115.2	0.22	-0.87	-0.62
34	9.9	118.8	0.25	-0.90	-0.61
35	10.2	122.4	0.29	-0.93	-0.64
36	10.5	126.0	0.30	-0.95	-0.65
37	10.8	129.6	0.34	-0.98	-0.64
38	11.1	133.2	0.33	-1.01	-0.68
39	11.4	136.8	0.32	-1.04	-0.72
40	11.7	140.4	0.32	-1.06	-0.74
41	12.0	144.0	0.30	-1.09	-0.79
42	12.3	147.6	0.22	-1.12	-0.90

2254+00, MSU St. 2

Point	Pavement	Profilograph	Profilograph	Pavement
	Width (X)	Coordinates	Level (in)	Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.05	-0.04	0.01
3	7.2	0.08	-0.07	0.01
4	10.8	0.09	-0.11	-0.02
5	14.4	0.07	-0.14	-0.07
6	18.0	0.02	-0.18	-0.16
7	21.6	-0.02	-0.21	-0.23
8	25.2	-0.04	-0.25	-0.29
9	28.8	-0.04	-0.28	-0.32
10	32.4	-0.01	-0.32	-0.33
11	36.0	-0.01	-0.35	-0.36
12	39.6	0.00	-0.39	-0.39
13	43.2	0.02	-0.43	-0.41
14	46.8	0.05	-0.46	-0.41
15	50.4	0.08	-0.50	-0.42
16	54.0	0.10	-0.53	-0.43
17	57.6	0.14	-0.57	-0.43
18	61.2	0.20	-0.60	-0.40
19	64.8	0.20	-0.64	-0.44
20	68.4	0.22	-0.67	-0.45
21	72.0	0.23	-0.71	-0.48
22	75.6	0.24	-0.74	-0.50
23	79.2	0.26	-0.78	-0.52
24	82.8	0.29	-0.82	-0.53
25	86.4	0.31	-0.85	-0.54
26	90.0	0.21	-0.89	-0.68
27	93.6	0.16	-0.92	-0.76
28	97.2	0.15	-0.96	-0.81
29	100.8	0.11	-0.99	-0.88
30	104.4	0.10	-1.03	-0.93
31	108.0	0.07	-1.06	-0.99
32	111.6	0.10	-1.10	-1.00
33	115.2	0.10	-1.13	-1.03
34	118.8	0.08	-1.17	-1.09
35	122.4	0.13	-1.21	-1.08
36	126.0	0.21	-1.24	-1.03
37	129.6	0.22	-1.28	-1.06
38	133.2	0.21	-1.31	-1.10
39	136.8	0.20	-1.35	-1.15
40	140.4	0.19	-1.38	-1.19
41	144.0	0.14	-1.42	-1.28
42	147.6	0.12	-1.45	-1.33
43	151.2	0.00	-1.49	-1.49

Table 42.2: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2250+00, MSU St. 3

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.04	0.06
3	7.2	0.13	-0.08	0.05
4	10.8	0.20	-0.12	0.08
5	14.4	0.19	-0.16	0.03
6	18.0	0.12	-0.20	-0.08
7	21.6	0.07	-0.25	-0.18
8	25.2	0.05	-0.29	-0.24
9	28.8	0.02	-0.33	-0.31
10	32.4	0.08	-0.37	-0.29
11	36.0	0.11	-0.41	-0.30
12	39.6	0.13	-0.45	-0.32
13	43.2	0.15	-0.49	-0.34
14	46.8	0.18	-0.53	-0.35
15	50.4	0.19	-0.57	-0.38
16	54.0	0.25	-0.61	-0.36
17	57.6	0.28	-0.65	-0.37
18	61.2	0.33	-0.70	-0.37
19	64.8	0.34	-0.74	-0.40
20	68.4	0.35	-0.78	-0.43
21	72.0	0.35	-0.82	-0.47
22	75.6	0.35	-0.86	-0.51
23	79.2	0.38	-0.90	-0.52
24	82.8	0.37	-0.94	-0.57
25	86.4	0.34	-0.98	-0.64
26	90.0	0.34	-1.02	-0.68
27	93.6	0.30	-1.06	-0.76
28	97.2	0.20	-1.10	-0.90
29	100.8	0.19	-1.15	-0.96
30	104.4	0.19	-1.19	-1.00
31	108.0	0.18	-1.23	-1.05
32	111.6	0.18	-1.27	-1.09
33	115.2	0.19	-1.31	-1.12
34	118.8	0.20	-1.35	-1.15
35	122.4	0.21	-1.39	-1.18
36	126.0	0.22	-1.43	-1.21
37	129.6	0.23	-1.47	-1.24
38	133.2	0.24	-1.51	-1.27
39	136.8	0.23	-1.55	-1.32
40	140.4	0.22	-1.60	-1.38
41	144.0	0.22	-1.64	-1.42
42	147.6	0.26	-1.68	-1.42

2244+00, MSU St. 4

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.09	-0.05	0.04
3	7.2	0.12	-0.10	0.02
4	10.8	0.18	-0.16	0.02
5	14.4	0.19	-0.21	-0.02
6	18.0	0.18	-0.26	-0.08
7	21.6	0.17	-0.31	-0.14
8	25.2	0.17	-0.36	-0.19
9	28.8	0.17	-0.41	-0.24
10	32.4	0.19	-0.47	-0.28
11	36.0	0.21	-0.52	-0.31
12	39.6	0.20	-0.57	-0.37
13	43.2	0.22	-0.62	-0.40
14	46.8	0.27	-0.67	-0.40
15	50.4	0.31	-0.73	-0.42
16	54.0	0.35	-0.78	-0.43
17	57.6	0.40	-0.83	-0.43
18	61.2	0.44	-0.88	-0.44
19	64.8	0.48	-0.93	-0.45
20	68.4	0.50	-0.98	-0.48
21	72.0	0.52	-1.04	-0.52
22	75.6	0.55	-1.09	-0.54
23	79.2	0.57	-1.14	-0.57
24	82.8	0.58	-1.19	-0.61
25	86.4	0.58	-1.24	-0.66
26	90.0	0.55	-1.30	-0.75
27	93.6	0.51	-1.35	-0.84
28	97.2	0.43	-1.40	-0.97
29	100.8	0.39	-1.45	-1.06
30	104.4	0.38	-1.50	-1.12
31	108.0	0.41	-1.55	-1.14
32	111.6	0.46	-1.61	-1.15
33	115.2	0.48	-1.66	-1.18
34	118.8	0.47	-1.71	-1.24
35	122.4	0.50	-1.76	-1.26
36	126.0	0.51	-1.81	-1.30
37	129.6	0.54	-1.87	-1.33
38	133.2	0.56	-1.92	-1.36
39	136.8	0.55	-1.97	-1.42
40	140.4	0.53	-2.02	-1.49
41	144.0	0.56	-2.07	-1.51
42	147.6	0.45	-2.12	-1.67

Table 42.3: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2238+00, MSU St. 5

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.15	-0.04	0.11
3	7.2	0.17	-0.08	0.09
4	10.8	0.20	-0.12	0.08
5	14.4	0.19	-0.16	0.03
6	18.0	0.14	-0.20	-0.06
7	21.6	0.12	-0.25	-0.13
8	25.2	0.10	-0.29	-0.19
9	28.8	0.10	-0.33	-0.23
10	32.4	0.10	-0.37	-0.27
11	36.0	0.14	-0.41	-0.27
12	39.6	0.15	-0.45	-0.30
13	43.2	0.20	-0.49	-0.29
14	46.8	0.26	-0.53	-0.27
15	50.4	0.30	-0.57	-0.27
16	54.0	0.34	-0.61	-0.27
17	57.6	0.35	-0.65	-0.30
18	61.2	0.37	-0.70	-0.33
19	64.8	0.40	-0.74	-0.34
20	68.4	0.40	-0.78	-0.38
21	72.0	0.42	-0.82	-0.40
22	75.6	0.44	-0.86	-0.42
23	79.2	0.45	-0.90	-0.45
24	82.8	0.43	-0.94	-0.51
25	86.4	0.43	-0.98	-0.55
26	90.0	0.41	-1.02	-0.61
27	93.6	0.36	-1.06	-0.70
28	97.2	0.32	-1.10	-0.78
29	100.8	0.33	-1.15	-0.82
30	104.4	0.31	-1.19	-0.88
31	108.0	0.30	-1.23	-0.93
32	111.6	0.34	-1.27	-0.93
33	115.2	0.37	-1.31	-0.94
34	118.8	0.40	-1.35	-0.95
35	122.4	0.43	-1.39	-0.96
36	126.0	0.45	-1.43	-0.98
37	129.6	0.46	-1.47	-1.01
38	133.2	0.47	-1.51	-1.04
39	136.8	0.44	-1.55	-1.11
40	140.4	0.42	-1.60	-1.18
41	144.0	0.41	-1.64	-1.23
42	147.6	0.32	-1.68	-1.36
43	151.2	0.19	-1.72	-1.53

2232+00, MSU St. 6

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.04	0.06
3	7.2	0.13	-0.09	0.04
4	10.8	0.17	-0.13	0.04
5	14.4	0.17	-0.17	-0.00
6	18.0	0.15	-0.22	-0.07
7	21.6	0.16	-0.26	-0.10
8	25.2	0.14	-0.31	-0.17
9	28.8	0.15	-0.35	-0.20
10	32.4	0.17	-0.39	-0.22
11	36.0	0.18	-0.44	-0.26
12	39.6	0.20	-0.48	-0.28
13	43.2	0.22	-0.52	-0.30
14	46.8	0.27	-0.57	-0.30
15	50.4	0.31	-0.61	-0.30
16	54.0	0.35	-0.65	-0.30
17	57.6	0.40	-0.70	-0.30
18	61.2	0.43	-0.74	-0.31
19	64.8	0.47	-0.79	-0.32
20	68.4	0.49	-0.83	-0.34
21	72.0	0.51	-0.87	-0.36
22	75.6	0.52	-0.92	-0.40
23	79.2	0.53	-0.96	-0.43
24	82.8	0.54	-1.00	-0.46
25	86.4	0.54	-1.05	-0.51
26	90.0	0.52	-1.09	-0.57
27	93.6	0.50	-1.13	-0.63
28	97.2	0.47	-1.18	-0.71
29	100.8	0.49	-1.22	-0.73
30	104.4	0.48	-1.27	-0.79
31	108.0	0.47	-1.31	-0.84
32	111.6	0.49	-1.35	-0.86
33	115.2	0.50	-1.40	-0.90
34	118.8	0.51	-1.44	-0.93
35	122.4	0.54	-1.48	-0.94
36	126.0	0.56	-1.53	-0.97
37	129.6	0.58	-1.57	-0.99
38	133.2	0.60	-1.61	-1.01
39	136.8	0.61	-1.66	-1.05
40	140.4	0.62	-1.70	-1.08
41	144.0	0.66	-1.75	-1.09
42	147.6	0.56	-1.79	-1.23
43	151.2	0.42	-1.83	-1.41

Table 42.4: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2226+00, MSU St. 7

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.05	-0.05	0.00
3	7.2	0.06	-0.09	-0.03
4	10.8	0.04	-0.14	-0.10
5	14.4	0.01	-0.19	-0.18
6	18.0	0.00	-0.23	-0.23
7	21.6	0.04	-0.28	-0.24
8	25.2	0.07	-0.32	-0.25
9	28.8	0.09	-0.37	-0.28
10	32.4	0.10	-0.42	-0.32
11	36.0	0.12	-0.46	-0.34
12	39.6	0.17	-0.51	-0.34
13	43.2	0.20	-0.56	-0.36
14	46.8	0.26	-0.60	-0.34
15	50.4	0.30	-0.65	-0.35
16	54.0	0.33	-0.70	-0.37
17	57.6	0.37	-0.74	-0.37
18	61.2	0.40	-0.79	-0.39
19	64.8	0.41	-0.83	-0.42
20	68.4	0.44	-0.88	-0.44
21	72.0	0.48	-0.93	-0.45
22	75.6	0.49	-0.97	-0.48
23	79.2	0.50	-1.02	-0.52
24	82.8	0.50	-1.07	-0.57
25	86.4	0.48	-1.11	-0.63
26	90.0	0.47	-1.16	-0.69
27	93.6	0.45	-1.21	-0.76
28	97.2	0.45	-1.25	-0.80
29	100.8	0.44	-1.30	-0.86
30	104.4	0.47	-1.34	-0.87
31	108.0	0.45	-1.39	-0.94
32	111.6	0.48	-1.44	-0.96
33	115.2	0.50	-1.48	-0.98
34	118.8	0.50	-1.53	-1.03
35	122.4	0.52	-1.58	-1.06
36	126.0	0.54	-1.62	-1.08
37	129.6	0.53	-1.67	-1.14
38	133.2	0.56	-1.72	-1.16
39	136.8	0.55	-1.76	-1.21
40	140.4	0.50	-1.81	-1.31
41	144.0	0.34	-1.85	-1.51
42	147.6	0.21	-1.90	-1.69
43	151.2	0.11	-1.95	-1.84

2220+00, MSU St. 8

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.06	-0.04	0.02
3	7.2	0.08	-0.07	0.01
4	10.8	0.12	-0.11	0.01
5	14.4	0.10	-0.14	-0.04
6	18.0	0.10	-0.18	-0.08
7	21.6	0.08	-0.21	-0.13
8	25.2	0.10	-0.25	-0.15
9	28.8	0.09	-0.28	-0.19
10	32.4	0.14	-0.32	-0.18
11	36.0	0.17	-0.35	-0.18
12	39.6	0.19	-0.39	-0.20
13	43.2	0.22	-0.43	-0.21
14	46.8	0.28	-0.46	-0.18
15	50.4	0.33	-0.50	-0.17
16	54.0	0.33	-0.53	-0.20
17	57.6	0.37	-0.57	-0.20
18	61.2	0.41	-0.60	-0.19
19	64.8	0.40	-0.64	-0.24
20	68.4	0.42	-0.67	-0.25
21	72.0	0.42	-0.71	-0.29
22	75.6	0.44	-0.74	-0.30
23	79.2	0.45	-0.78	-0.33
24	82.8	0.45	-0.82	-0.37
25	86.4	0.40	-0.85	-0.45
26	90.0	0.40	-0.89	-0.49
27	93.6	0.37	-0.92	-0.55
28	97.2	0.35	-0.96	-0.61
29	100.8	0.33	-0.99	-0.66
30	104.4	0.36	-1.03	-0.67
31	108.0	0.34	-1.06	-0.72
32	111.6	0.37	-1.10	-0.73
33	115.2	0.39	-1.13	-0.74
34	118.8	0.41	-1.17	-0.76
35	122.4	0.42	-1.21	-0.79
36	126.0	0.43	-1.24	-0.81
37	129.6	0.45	-1.28	-0.83
38	133.2	0.47	-1.31	-0.84
39	136.8	0.45	-1.35	-0.90
40	140.4	0.45	-1.38	-0.93
41	144.0	0.37	-1.42	-1.05
42	147.6	0.30	-1.45	-1.15
43	151.2	0.00	-1.49	-1.49
44	154.8	-0.02	-1.52	-1.54

Table 42.5: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2214+00, MSU St. 9

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.05	-0.05	-0.00
3	7.2	0.03	-0.10	-0.07
4	10.8	0.01	-0.16	-0.15
5	14.4	0.00	-0.21	-0.21
6	18.0	0.00	-0.26	-0.26
7	21.6	0.03	-0.31	-0.28
8	25.2	0.06	-0.36	-0.30
9	28.8	0.08	-0.41	-0.33
10	32.4	0.10	-0.47	-0.37
11	36.0	0.14	-0.52	-0.38
12	39.6	0.16	-0.57	-0.41
13	43.2	0.21	-0.62	-0.41
14	46.8	0.26	-0.67	-0.41
15	50.4	0.29	-0.73	-0.44
16	54.0	0.34	-0.78	-0.44
17	57.6	0.39	-0.83	-0.44
18	61.2	0.40	-0.88	-0.48
19	64.8	0.43	-0.93	-0.50
20	68.4	0.47	-0.98	-0.51
21	72.0	0.50	-1.04	-0.54
22	75.6	0.51	-1.09	-0.58
23	79.2	0.51	-1.14	-0.63
24	82.8	0.49	-1.19	-0.70
25	86.4	0.47	-1.24	-0.77
26	90.0	0.46	-1.30	-0.84
27	93.6	0.45	-1.35	-0.90
28	97.2	0.44	-1.40	-0.96
29	100.8	0.47	-1.45	-0.98
30	104.4	0.48	-1.50	-1.02
31	108.0	0.48	-1.55	-1.07
32	111.6	0.51	-1.61	-1.10
33	115.2	0.52	-1.66	-1.14
34	118.8	0.53	-1.71	-1.18
35	122.4	0.56	-1.76	-1.20
36	126.0	0.58	-1.81	-1.23
37	129.6	0.58	-1.87	-1.29
38	133.2	0.61	-1.92	-1.31
39	136.8	0.64	-1.97	-1.33
40	140.4	0.53	-2.02	-1.49
41	144.0	0.40	-2.07	-1.67
42	147.6	0.22	-2.12	-1.90
43	151.2	-0.10	-2.18	-2.28

2208+00, MSU St. 10

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.08	-0.06	0.02
3	7.2	0.12	-0.11	0.01
4	10.8	0.13	-0.17	-0.04
5	14.4	0.13	-0.23	-0.10
6	18.0	0.10	-0.29	-0.19
7	21.6	0.11	-0.34	-0.23
8	25.2	0.12	-0.40	-0.28
9	28.8	0.11	-0.46	-0.35
10	32.4	0.15	-0.52	-0.37
11	36.0	0.17	-0.57	-0.40
12	39.6	0.18	-0.63	-0.45
13	43.2	0.20	-0.69	-0.49
14	46.8	0.24	-0.74	-0.50
15	50.4	0.28	-0.80	-0.52
16	54.0	0.31	-0.86	-0.55
17	57.6	0.34	-0.92	-0.58
18	61.2	0.37	-0.97	-0.60
19	64.8	0.40	-1.03	-0.63
20	68.4	0.39	-1.09	-0.70
21	72.0	0.41	-1.15	-0.74
22	75.6	0.42	-1.20	-0.78
23	79.2	0.42	-1.26	-0.84
24	82.8	0.41	-1.32	-0.91
25	86.4	0.41	-1.37	-0.96
26	90.0	0.40	-1.43	-1.03
27	93.6	0.37	-1.49	-1.12
28	97.2	0.36	-1.55	-1.19
29	100.8	0.35	-1.60	-1.25
30	104.4	0.36	-1.66	-1.30
31	108.0	0.37	-1.72	-1.35
32	111.6	0.39	-1.78	-1.39
33	115.2	0.39	-1.83	-1.44
34	118.8	0.40	-1.89	-1.49
35	122.4	0.45	-1.95	-1.50
36	126.0	0.47	-2.00	-1.53
37	129.6	0.50	-2.06	-1.56
38	133.2	0.50	-2.12	-1.62
39	136.8	0.49	-2.18	-1.69
40	140.4	0.51	-2.23	-1.72
41	144.0	0.38	-2.29	-1.91
42	147.6	0.27	-2.35	-2.08
43	151.2	0.11	-2.41	-2.30

Table 42.6: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2200+00, MSU St. 11

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.05	-0.04	0.01
3	7.2	0.16	-0.09	0.07
4	10.8	0.22	-0.13	0.09
5	14.4	0.23	-0.17	-0.05
6	18.0	0.12	-0.22	-0.31
7	21.6	-0.09	-0.26	-0.46
8	25.2	-0.20	-0.31	-0.49
9	28.8	-0.18	-0.35	-0.48
10	32.4	-0.13	-0.39	-0.54
11	36.0	-0.15	-0.44	-0.58
12	39.6	-0.14	-0.48	-0.52
13	43.2	-0.04	-0.52	-0.42
14	46.8	0.10	-0.57	-0.30
15	50.4	0.27	-0.61	-0.18
16	54.0	0.43	-0.65	-0.10
17	57.6	0.55	-0.70	-0.13
18	61.2	0.57	-0.74	-0.15
19	64.8	0.59	-0.79	-0.22
20	68.4	0.57	-0.83	-0.26
21	72.0	0.57	-0.87	-0.31
22	75.6	0.56	-0.92	-0.37
23	79.2	0.55	-0.96	-0.42
24	82.8	0.54	-1.00	-0.43
25	86.4	0.57	-1.05	-0.51
26	90.0	0.54	-1.09	-0.71
27	93.6	0.38	-1.13	-0.90
28	97.2	0.23	-1.18	-1.04
29	100.8	0.14	-1.22	-1.11
30	104.4	0.11	-1.27	-1.14
31	108.0	0.13	-1.31	-1.18
32	111.6	0.14	-1.35	-1.21
33	115.2	0.17	-1.40	-1.23
34	118.8	0.28	-1.44	-1.16
35	122.4	0.41	-1.48	-1.07
36	126.0	0.59	-1.53	-0.94
37	129.6	0.74	-1.57	-0.83
38	133.2	0.72	-1.61	-0.89
39	136.8	0.59	-1.66	-1.07
40	140.4	0.52	-1.70	-1.18
41	144.0	0.40	-1.75	-1.35
42	147.6	0.26	-1.79	-1.53
43	151.2	0.11	-1.83	-1.72

2196+00, MSU St. 12

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.11	-0.04	0.07
3	7.2	0.23	-0.08	0.15
4	10.8	0.29	-0.12	0.17
5	14.4	0.25	-0.16	0.09
6	18.0	0.05	-0.20	-0.15
7	21.6	-0.15	-0.25	-0.40
8	25.2	-0.14	-0.29	-0.43
9	28.8	-0.08	-0.33	-0.41
10	32.4	-0.10	-0.37	-0.47
11	36.0	-0.12	-0.41	-0.53
12	39.6	-0.03	-0.45	-0.48
13	43.2	0.10	-0.49	-0.39
14	46.8	0.27	-0.53	-0.26
15	50.4	0.42	-0.57	-0.15
16	54.0	0.58	-0.61	-0.03
17	57.6	0.67	-0.65	0.02
18	61.2	0.63	-0.70	-0.07
19	64.8	0.58	-0.74	-0.16
20	68.4	0.57	-0.78	-0.21
21	72.0	0.56	-0.82	-0.26
22	75.6	0.57	-0.86	-0.29
23	79.2	0.59	-0.90	-0.31
24	82.8	0.60	-0.94	-0.34
25	86.4	0.60	-0.98	-0.38
26	90.0	0.58	-1.02	-0.44
27	93.6	0.28	-1.06	-0.78
28	97.2	0.13	-1.10	-0.97
29	100.8	0.12	-1.15	-1.03
30	104.4	0.14	-1.19	-1.05
31	108.0	0.16	-1.23	-1.07
32	111.6	0.18	-1.27	-1.09
33	115.2	0.29	-1.31	-1.02
34	118.8	0.43	-1.35	-0.92
35	122.4	0.59	-1.39	-0.80
36	126.0	0.79	-1.43	-0.64
37	129.6	0.86	-1.47	-0.61
38	133.2	0.74	-1.51	-0.77
39	136.8	0.58	-1.55	-0.97
40	140.4	0.48	-1.60	-1.12
41	144.0	0.33	-1.64	-1.31
42	147.6	0.23	-1.68	-1.45
43	151.2	0.12	-1.72	-1.60

Table 42.7: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2192+00, MSU St. 13

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.13	-0.03	0.10
3	7.2	0.24	-0.06	0.18
4	10.8	0.33	-0.09	0.24
5	14.4	0.36	-0.12	0.24
6	18.0	0.38	-0.15	0.23
7	21.6	0.25	-0.18	0.07
8	25.2	0.03	-0.21	-0.18
9	28.8	-0.07	-0.24	-0.31
10	32.4	-0.05	-0.27	-0.32
11	36.0	-0.02	-0.30	-0.32
12	39.6	-0.06	-0.33	-0.39
13	43.2	-0.08	-0.36	-0.44
14	46.8	0.04	-0.39	-0.35
15	50.4	0.15	-0.42	-0.27
16	54.0	0.24	-0.45	-0.21
17	57.6	0.38	-0.48	-0.10
18	61.2	0.50	-0.51	-0.01
19	64.8	0.53	-0.54	-0.01
20	68.4	0.52	-0.57	-0.05
21	72.0	0.51	-0.60	-0.09
22	75.6	0.50	-0.63	-0.13
23	79.2	0.48	-0.66	-0.18
24	82.8	0.47	-0.69	-0.22
25	86.4	0.46	-0.72	-0.26
26	90.0	0.44	-0.75	-0.31
27	93.6	0.41	-0.78	-0.37
28	97.2	0.25	-0.81	-0.56
29	100.8	0.04	-0.84	-0.80
30	104.4	-0.03	-0.87	-0.90
31	108.0	-0.05	-0.90	-0.95
32	111.6	-0.06	-0.93	-0.99
33	115.2	-0.06	-0.96	-1.02
34	118.8	-0.02	-0.99	-1.01
35	122.4	0.05	-1.02	-0.97
36	126.0	0.18	-1.05	-0.87
37	129.6	0.30	-1.08	-0.78
38	133.2	0.43	-1.11	-0.68
39	136.8	0.50	-1.14	-0.64
40	140.4	0.47	-1.17	-0.70
41	144.0	0.30	-1.20	-0.90
42	147.6	0.19	-1.23	-1.04

2188+00, MSU St. 14

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.03	0.07
3	7.2	0.18	-0.07	0.11
4	10.8	0.31	-0.10	0.21
5	14.4	0.33	-0.13	0.20
6	18.0	0.29	-0.16	0.13
7	21.6	0.15	-0.20	-0.05
8	25.2	0.00	-0.23	-0.23
9	28.8	-0.01	-0.26	-0.27
10	32.4	0.04	-0.29	-0.25
11	36.0	0.00	-0.33	-0.33
12	39.6	0.03	-0.36	-0.33
13	43.2	0.10	-0.39	-0.29
14	46.8	0.19	-0.43	-0.24
15	50.4	0.29	-0.46	-0.17
16	54.0	0.46	-0.49	-0.03
17	57.6	0.58	-0.52	0.06
18	61.2	0.66	-0.56	0.10
19	64.8	0.64	-0.59	0.05
20	68.4	0.61	-0.62	-0.01
21	72.0	0.63	-0.65	-0.02
22	75.6	0.63	-0.69	-0.06
23	79.2	0.62	-0.72	-0.10
24	82.8	0.63	-0.75	-0.12
25	86.4	0.62	-0.79	-0.17
26	90.0	0.60	-0.82	-0.22
27	93.6	0.52	-0.85	-0.33
28	97.2	0.35	-0.88	-0.53
29	100.8	0.26	-0.92	-0.66
30	104.4	0.24	-0.95	-0.71
31	108.0	0.23	-0.98	-0.75
32	111.6	0.22	-1.01	-0.79
33	115.2	0.25	-1.05	-0.80
34	118.8	0.33	-1.08	-0.75
35	122.4	0.44	-1.11	-0.67
36	126.0	0.56	-1.15	-0.59
37	129.6	0.71	-1.18	-0.47
38	133.2	0.84	-1.21	-0.37
39	136.8	0.86	-1.24	-0.38
40	140.4	0.71	-1.28	-0.57
41	144.0	0.54	-1.31	-0.77
42	147.6	0.52	-1.34	-0.82

Table 42.8: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2184+00, MSU St. 15

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.03	-0.03	0.00
3	7.2	0.16	-0.05	0.11
4	10.8	0.20	-0.08	0.12
5	14.4	0.27	-0.11	0.16
6	18.0	0.28	-0.14	0.14
7	21.6	0.13	-0.16	-0.03
8	25.2	-0.04	-0.19	-0.23
9	28.8	-0.08	-0.22	-0.30
10	32.4	-0.05	-0.25	-0.30
11	36.0	-0.06	-0.27	-0.33
12	39.6	-0.07	-0.30	-0.37
13	43.2	0.00	-0.33	-0.33
14	46.8	0.10	-0.35	-0.25
15	50.4	0.21	-0.38	-0.17
16	54.0	0.39	-0.41	-0.02
17	57.6	0.51	-0.44	0.07
18	61.2	0.58	-0.46	0.12
19	64.8	0.61	-0.49	0.12
20	68.4	0.57	-0.52	0.05
21	72.0	0.55	-0.55	0.00
22	75.6	0.56	-0.57	-0.01
23	79.2	0.58	-0.60	-0.02
24	82.8	0.54	-0.63	-0.09
25	86.4	0.52	-0.65	-0.13
26	90.0	0.53	-0.68	-0.15
27	93.6	0.41	-0.71	-0.30
28	97.2	0.26	-0.74	-0.48
29	100.8	0.13	-0.76	-0.63
30	104.4	0.10	-0.79	-0.69
31	108.0	0.10	-0.82	-0.72
32	111.6	0.11	-0.85	-0.74
33	115.2	0.12	-0.87	-0.75
34	118.8	0.18	-0.90	-0.72
35	122.4	0.29	-0.93	-0.64
36	126.0	0.39	-0.95	-0.56
37	129.6	0.57	-0.98	-0.41
38	133.2	0.64	-1.01	-0.37
39	136.8	0.62	-1.04	-0.42
40	140.4	0.49	-1.06	-0.57
41	144.0	0.31	-1.09	-0.78
42	147.6	0.21	-1.12	-0.91

2180+00, MSU St. 16

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.04	0.06
3	7.2	0.20	-0.07	0.13
4	10.8	0.29	-0.11	0.18
5	14.4	0.33	-0.14	0.19
6	18.0	0.31	-0.18	0.13
7	21.6	0.12	-0.21	-0.09
8	25.2	-0.01	-0.25	-0.26
9	28.8	0.00	-0.28	-0.28
10	32.4	0.05	-0.32	-0.27
11	36.0	0.01	-0.35	-0.34
12	39.6	0.02	-0.39	-0.37
13	43.2	0.13	-0.43	-0.30
14	46.8	0.27	-0.46	-0.19
15	50.4	0.41	-0.50	-0.09
16	54.0	0.55	-0.53	0.02
17	57.6	0.67	-0.57	0.10
18	61.2	0.70	-0.60	0.10
19	64.8	0.70	-0.64	0.06
20	68.4	0.71	-0.67	0.04
21	72.0	0.70	-0.71	-0.01
22	75.6	0.73	-0.74	-0.01
23	79.2	0.75	-0.78	-0.03
24	82.8	0.71	-0.82	-0.11
25	86.4	0.70	-0.85	-0.15
26	90.0	0.70	-0.89	-0.19
27	93.6	0.58	-0.92	-0.34
28	97.2	0.41	-0.96	-0.55
29	100.8	0.32	-0.99	-0.67
30	104.4	0.33	-1.03	-0.70
31	108.0	0.32	-1.06	-0.74
32	111.6	0.35	-1.10	-0.75
33	115.2	0.35	-1.13	-0.78
34	118.8	0.44	-1.17	-0.73
35	122.4	0.57	-1.21	-0.64
36	126.0	0.69	-1.24	-0.55
37	129.6	0.80	-1.28	-0.48
38	133.2	0.76	-1.31	-0.55
39	136.8	0.67	-1.35	-0.68
40	140.4	0.60	-1.38	-0.78
41	144.0	0.48	-1.42	-0.94
42	147.6	0.35	-1.45	-1.10
43	151.2	0.21	-1.49	-1.28

Table 42.9: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2176+00, MSU St. 17

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.05	0.05
3	7.2	0.14	-0.10	0.04
4	10.8	0.17	-0.15	0.02
5	14.4	0.16	-0.20	-0.04
6	18.0	0.07	-0.25	-0.18
7	21.6	-0.03	-0.29	-0.32
8	25.2	-0.09	-0.34	-0.43
9	28.8	-0.07	-0.39	-0.46
10	32.4	-0.13	-0.44	-0.57
11	36.0	-0.13	-0.49	-0.62
12	39.6	-0.03	-0.54	-0.57
13	43.2	0.04	-0.59	-0.55
14	46.8	0.10	-0.64	-0.54
15	50.4	0.14	-0.69	-0.55
16	54.0	0.40	-0.74	-0.34
17	57.6	0.51	-0.79	-0.28
18	61.2	0.58	-0.83	-0.25
19	64.8	0.59	-0.88	-0.29
20	68.4	0.60	-0.93	-0.33
21	72.0	0.62	-0.98	-0.36
22	75.6	0.63	-1.03	-0.40
23	79.2	0.61	-1.08	-0.47
24	82.8	0.59	-1.13	-0.54
25	86.4	0.56	-1.18	-0.62
26	90.0	0.50	-1.23	-0.73
27	93.6	0.33	-1.28	-0.95
28	97.2	0.26	-1.33	-1.07
29	100.8	0.21	-1.37	-1.16
30	104.4	0.18	-1.42	-1.24
31	108.0	0.17	-1.47	-1.30
32	111.6	0.21	-1.52	-1.31
33	115.2	0.23	-1.57	-1.34
34	118.8	0.30	-1.62	-1.32
35	122.4	0.38	-1.67	-1.29
36	126.0	0.49	-1.72	-1.23
37	129.6	0.59	-1.77	-1.18
38	133.2	0.57	-1.82	-1.25
39	136.8	0.48	-1.87	-1.39
40	140.4	0.46	-1.91	-1.45
41	144.0	0.34	-1.96	-1.62
42	147.6	0.22	-2.01	-1.79

2170+00, MSU St. 18

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.07	-0.04	0.03
3	7.2	0.07	-0.09	-0.02
4	10.8	0.04	-0.13	-0.09
5	14.4	0.00	-0.17	-0.17
6	18.0	0.01	-0.22	-0.21
7	21.6	0.02	-0.26	-0.24
8	25.2	0.06	-0.31	-0.25
9	28.8	0.08	-0.35	-0.27
10	32.4	0.12	-0.39	-0.27
11	36.0	0.14	-0.44	-0.30
12	39.6	0.20	-0.48	-0.28
13	43.2	0.24	-0.52	-0.28
14	46.8	0.30	-0.57	-0.27
15	50.4	0.39	-0.61	-0.22
16	54.0	0.43	-0.65	-0.22
17	57.6	0.46	-0.70	-0.24
18	61.2	0.50	-0.74	-0.24
19	64.8	0.51	-0.79	-0.28
20	68.4	0.53	-0.83	-0.30
21	72.0	0.55	-0.87	-0.32
22	75.6	0.59	-0.92	-0.33
23	79.2	0.59	-0.96	-0.37
24	82.8	0.60	-1.00	-0.40
25	86.4	0.57	-1.05	-0.48
26	90.0	0.54	-1.09	-0.55
27	93.6	0.48	-1.13	-0.65
28	97.2	0.45	-1.18	-0.73
29	100.8	0.45	-1.22	-0.77
30	104.4	0.47	-1.27	-0.80
31	108.0	0.48	-1.31	-0.83
32	111.6	0.50	-1.35	-0.85
33	115.2	0.52	-1.40	-0.88
34	118.8	0.56	-1.44	-0.88
35	122.4	0.59	-1.48	-0.89
36	126.0	0.60	-1.53	-0.93
37	129.6	0.60	-1.57	-0.97
38	133.2	0.62	-1.61	-0.99
39	136.8	0.63	-1.66	-1.03
40	140.4	0.59	-1.70	-1.11
41	144.0	0.52	-1.75	-1.23
42	147.6	0.41	-1.79	-1.38
43	151.2	0.30	-1.83	-1.53

Table 42.10: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2164+00, MSU St. 19

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.06	-0.04	0.02
3	7.2	0.10	-0.09	0.01
4	10.8	0.10	-0.13	-0.03
5	14.4	0.07	-0.17	-0.10
6	18.0	0.08	-0.22	-0.14
7	21.6	0.05	-0.26	-0.21
8	25.2	0.05	-0.31	-0.26
9	28.8	0.07	-0.35	-0.28
10	32.4	0.09	-0.39	-0.30
11	36.0	0.12	-0.44	-0.32
12	39.6	0.17	-0.48	-0.31
13	43.2	0.21	-0.52	-0.31
14	46.8	0.29	-0.57	-0.28
15	50.4	0.31	-0.61	-0.30
16	54.0	0.36	-0.65	-0.29
17	57.6	0.42	-0.70	-0.28
18	61.2	0.47	-0.74	-0.27
19	64.8	0.50	-0.79	-0.29
20	68.4	0.54	-0.83	-0.29
21	72.0	0.54	-0.87	-0.33
22	75.6	0.56	-0.92	-0.36
23	79.2	0.58	-0.96	-0.38
24	82.8	0.55	-1.00	-0.45
25	86.4	0.50	-1.05	-0.55
26	90.0	0.48	-1.09	-0.61
27	93.6	0.43	-1.13	-0.70
28	97.2	0.46	-1.18	-0.72
29	100.8	0.45	-1.22	-0.77
30	104.4	0.42	-1.27	-0.85
31	108.0	0.49	-1.31	-0.82
32	111.6	0.48	-1.35	-0.87
33	115.2	0.49	-1.40	-0.91
34	118.8	0.55	-1.44	-0.89
35	122.4	0.58	-1.48	-0.90
36	126.0	0.56	-1.53	-0.97
37	129.6	0.55	-1.57	-1.02
38	133.2	0.53	-1.61	-1.08
39	136.8	0.50	-1.66	-1.16
40	140.4	0.37	-1.70	-1.33
41	144.0	0.24	-1.75	-1.51
42	147.6	0.18	-1.79	-1.61

2160+00, MSU St. 20

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.03	-0.05	-0.02
3	7.2	0.07	-0.09	-0.02
4	10.8	0.07	-0.14	-0.07
5	14.4	0.05	-0.19	-0.14
6	18.0	0.04	-0.23	-0.19
7	21.6	0.04	-0.28	-0.24
8	25.2	0.05	-0.32	-0.27
9	28.8	0.06	-0.37	-0.31
10	32.4	0.07	-0.42	-0.35
11	36.0	0.08	-0.46	-0.38
12	39.6	0.11	-0.51	-0.40
13	43.2	0.17	-0.56	-0.39
14	46.8	0.19	-0.60	-0.41
15	50.4	0.20	-0.65	-0.45
16	54.0	0.24	-0.70	-0.46
17	57.6	0.27	-0.74	-0.47
18	61.2	0.30	-0.79	-0.49
19	64.8	0.34	-0.83	-0.49
20	68.4	0.39	-0.88	-0.49
21	72.0	0.41	-0.93	-0.52
22	75.6	0.46	-0.97	-0.51
23	79.2	0.47	-1.02	-0.55
24	82.8	0.47	-1.07	-0.60
25	86.4	0.46	-1.11	-0.65
26	90.0	0.42	-1.16	-0.74
27	93.6	0.40	-1.21	-0.81
28	97.2	0.41	-1.25	-0.84
29	100.8	0.40	-1.30	-0.90
30	104.4	0.37	-1.34	-0.97
31	108.0	0.40	-1.39	-0.99
32	111.6	0.43	-1.44	-1.01
33	115.2	0.43	-1.48	-1.05
34	118.8	0.47	-1.53	-1.06
35	122.4	0.49	-1.58	-1.09
36	126.0	0.49	-1.62	-1.13
37	129.6	0.50	-1.67	-1.17
38	133.2	0.48	-1.72	-1.24
39	136.8	0.47	-1.76	-1.29
40	140.4	0.44	-1.81	-1.37
41	144.0	0.33	-1.85	-1.52
42	147.6	0.20	-1.90	-1.70

Table 42.11: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2154+00, MSU St. 21

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.07	-0.03	0.04
3	7.2	0.15	-0.05	0.10
4	10.8	0.23	-0.08	0.15
5	14.4	0.23	-0.11	0.12
6	18.0	0.20	-0.14	0.06
7	21.6	0.22	-0.16	0.06
8	25.2	0.23	-0.19	0.04
9	28.8	0.21	-0.22	-0.01
10	32.4	0.23	-0.25	-0.02
11	36.0	0.24	-0.27	-0.03
12	39.6	0.26	-0.30	-0.04
13	43.2	0.28	-0.33	-0.05
14	46.8	0.32	-0.35	-0.03
15	50.4	0.35	-0.38	-0.03
16	54.0	0.40	-0.41	-0.01
17	57.6	0.40	-0.44	-0.04
18	61.2	0.43	-0.46	-0.03
19	64.8	0.48	-0.49	-0.01
20	68.4	0.49	-0.52	-0.03
21	72.0	0.50	-0.55	-0.05
22	75.6	0.51	-0.57	-0.06
23	79.2	0.53	-0.60	-0.07
24	82.8	0.54	-0.63	-0.09
25	86.4	0.53	-0.65	-0.12
26	90.0	0.53	-0.68	-0.15
27	93.6	0.50	-0.71	-0.21
28	97.2	0.45	-0.74	-0.29
29	100.8	0.44	-0.76	-0.32
30	104.4	0.42	-0.79	-0.37
31	108.0	0.40	-0.82	-0.42
32	111.6	0.41	-0.85	-0.44
33	115.2	0.42	-0.87	-0.45
34	118.8	0.44	-0.90	-0.46
35	122.4	0.48	-0.93	-0.45
36	126.0	0.50	-0.95	-0.45
37	129.6	0.49	-0.98	-0.49
38	133.2	0.51	-1.01	-0.50
39	136.8	0.50	-1.04	-0.54
40	140.4	0.48	-1.06	-0.58
41	144.0	0.48	-1.09	-0.61
42	147.6	0.34	-1.12	-0.78

2150+00, MSU St. 22

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.08	-0.04	0.04
3	7.2	0.14	-0.08	0.06
4	10.8	0.17	-0.11	0.06
5	14.4	0.19	-0.15	0.04
6	18.0	0.19	-0.19	-0.00
7	21.6	0.16	-0.23	-0.07
8	25.2	0.20	-0.27	-0.07
9	28.8	0.25	-0.31	-0.06
10	32.4	0.29	-0.34	-0.05
11	36.0	0.30	-0.38	-0.08
12	39.6	0.34	-0.42	-0.08
13	43.2	0.40	-0.46	-0.06
14	46.8	0.44	-0.50	-0.06
15	50.4	0.49	-0.53	-0.04
16	54.0	0.51	-0.57	-0.06
17	57.6	0.57	-0.61	-0.04
18	61.2	0.54	-0.65	-0.11
19	64.8	0.61	-0.69	-0.08
20	68.4	0.66	-0.73	-0.07
21	72.0	0.67	-0.76	-0.09
22	75.6	0.69	-0.80	-0.11
23	79.2	0.71	-0.84	-0.13
24	82.8	0.70	-0.88	-0.18
25	86.4	0.71	-0.92	-0.21
26	90.0	0.68	-0.95	-0.27
27	93.6	0.65	-0.99	-0.34
28	97.2	0.66	-1.03	-0.37
29	100.8	0.63	-1.07	-0.44
30	104.4	0.64	-1.11	-0.47
31	108.0	0.68	-1.15	-0.47
32	111.6	0.67	-1.18	-0.51
33	115.2	0.70	-1.22	-0.52
34	118.8	0.70	-1.26	-0.56
35	122.4	0.74	-1.30	-0.56
36	126.0	0.75	-1.34	-0.59
37	129.6	0.78	-1.37	-0.59
38	133.2	0.79	-1.41	-0.62
39	136.8	0.80	-1.45	-0.65
40	140.4	0.70	-1.49	-0.79
41	144.0	0.61	-1.53	-0.92
42	147.6	0.50	-1.57	-1.07

Table 42.12: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2144+00, MSU St. 23

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.03	0.07
3	7.2	0.13	-0.05	0.08
4	10.8	0.17	-0.08	0.09
5	14.4	0.18	-0.11	0.07
6	18.0	0.12	-0.14	-0.02
7	21.6	0.09	-0.16	-0.07
8	25.2	0.11	-0.19	-0.08
9	28.8	0.14	-0.22	-0.08
10	32.4	0.22	-0.25	-0.03
11	36.0	0.21	-0.27	-0.06
12	39.6	0.23	-0.30	-0.07
13	43.2	0.28	-0.33	-0.05
14	46.8	0.31	-0.35	-0.04
15	50.4	0.34	-0.38	-0.04
16	54.0	0.41	-0.41	0.00
17	57.6	0.46	-0.44	0.02
18	61.2	0.48	-0.46	0.02
19	64.8	0.53	-0.49	0.04
20	68.4	0.54	-0.52	0.02
21	72.0	0.53	-0.55	-0.02
22	75.6	0.56	-0.57	-0.01
23	79.2	0.59	-0.60	-0.01
24	82.8	0.58	-0.63	-0.05
25	86.4	0.59	-0.65	-0.06
26	90.0	0.58	-0.68	-0.10
27	93.6	0.53	-0.71	-0.18
28	97.2	0.53	-0.74	-0.21
29	100.8	0.52	-0.76	-0.24
30	104.4	0.51	-0.79	-0.28
31	108.0	0.52	-0.82	-0.30
32	111.6	0.50	-0.85	-0.35
33	115.2	0.50	-0.87	-0.37
34	118.8	0.52	-0.90	-0.38
35	122.4	0.54	-0.93	-0.39
36	126.0	0.54	-0.95	-0.41
37	129.6	0.57	-0.98	-0.41
38	133.2	0.56	-1.01	-0.45
39	136.8	0.56	-1.04	-0.48
40	140.4	0.55	-1.06	-0.51
41	144.0	0.51	-1.09	-0.58
42	147.6	0.47	-1.12	-0.65
43	151.2	0.30	-1.15	-0.85

2138+00, MSU St. 24

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.12	-0.02	0.10
3	7.2	0.15	-0.04	0.11
4	10.8	0.19	-0.07	0.12
5	14.4	0.20	-0.09	0.11
6	18.0	0.18	-0.11	0.07
7	21.6	0.14	-0.13	0.01
8	25.2	0.19	-0.15	0.04
9	28.8	0.20	-0.17	0.03
10	32.4	0.21	-0.20	0.01
11	36.0	0.23	-0.22	0.01
12	39.6	0.24	-0.24	-0.00
13	43.2	0.30	-0.26	0.04
14	46.8	0.34	-0.28	0.06
15	50.4	0.37	-0.31	0.06
16	54.0	0.41	-0.33	0.08
17	57.6	0.44	-0.35	0.09
18	61.2	0.47	-0.37	0.10
19	64.8	0.51	-0.39	0.12
20	68.4	0.53	-0.41	0.12
21	72.0	0.51	-0.44	0.07
22	75.6	0.56	-0.46	0.10
23	79.2	0.57	-0.48	0.09
24	82.8	0.55	-0.50	0.05
25	86.4	0.55	-0.52	0.03
26	90.0	0.51	-0.55	-0.04
27	93.6	0.46	-0.57	-0.11
28	97.2	0.46	-0.59	-0.13
29	100.8	0.47	-0.61	-0.14
30	104.4	0.46	-0.63	-0.17
31	108.0	0.45	-0.65	-0.20
32	111.6	0.44	-0.68	-0.24
33	115.2	0.47	-0.70	-0.23
34	118.8	0.48	-0.72	-0.24
35	122.4	0.47	-0.74	-0.27
36	126.0	0.47	-0.76	-0.29
37	129.6	0.47	-0.79	-0.32
38	133.2	0.46	-0.81	-0.35
39	136.8	0.44	-0.83	-0.39
40	140.4	0.45	-0.85	-0.40
41	144.0	0.40	-0.87	-0.47
42	147.6	0.32	-0.89	-0.57
43	151.2	0.21	-0.92	-0.71

Table 42.13: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Driving Lane.

2134+00, MSU St. 25

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.03	-0.03	-0.00
3	7.2	0.10	-0.07	0.03
4	10.8	0.10	-0.10	0.00
5	14.4	0.10	-0.13	-0.03
6	18.0	0.09	-0.16	-0.07
7	21.6	0.11	-0.20	-0.09
8	25.2	0.12	-0.23	-0.11
9	28.8	0.14	-0.26	-0.12
10	32.4	0.18	-0.29	-0.11
11	36.0	0.21	-0.33	-0.12
12	39.6	0.22	-0.36	-0.14
13	43.2	0.24	-0.39	-0.15
14	46.8	0.31	-0.43	-0.12
15	50.4	0.36	-0.46	-0.10
16	54.0	0.40	-0.49	-0.09
17	57.6	0.41	-0.52	-0.11
18	61.2	0.42	-0.56	-0.14
19	64.8	0.43	-0.59	-0.16
20	68.4	0.49	-0.62	-0.13
21	72.0	0.48	-0.65	-0.17
22	75.6	0.51	-0.69	-0.18
23	79.2	0.52	-0.72	-0.20
24	82.8	0.52	-0.75	-0.23
25	86.4	0.53	-0.79	-0.26
26	90.0	0.49	-0.82	-0.33
27	93.6	0.48	-0.85	-0.37
28	97.2	0.49	-0.88	-0.39
29	100.8	0.48	-0.92	-0.44
30	104.4	0.49	-0.95	-0.46
31	108.0	0.52	-0.98	-0.46
32	111.6	0.56	-1.01	-0.45
33	115.2	0.55	-1.05	-0.50
34	118.8	0.56	-1.08	-0.52
35	122.4	0.59	-1.11	-0.52
36	126.0	0.60	-1.15	-0.55
37	129.6	0.64	-1.18	-0.54
38	133.2	0.63	-1.21	-0.58
39	136.8	0.63	-1.24	-0.61
40	140.4	0.52	-1.28	-0.76
41	144.0	0.39	-1.31	-0.92
42	147.6	0.28	-1.34	-1.06
43	151.2	0.15	-1.37	-1.22

2130+00, MSU St. 26

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.07	-0.03	0.04
3	7.2	0.11	-0.06	0.05
4	10.8	0.10	-0.09	0.01
5	14.4	0.14	-0.12	0.02
6	18.0	0.13	-0.15	-0.02
7	21.6	0.14	-0.18	-0.04
8	25.2	0.17	-0.21	-0.04
9	28.8	0.19	-0.24	-0.05
10	32.4	0.20	-0.27	-0.07
11	36.0	0.21	-0.30	-0.09
12	39.6	0.23	-0.33	-0.10
13	43.2	0.31	-0.36	-0.05
14	46.8	0.33	-0.39	-0.06
15	50.4	0.36	-0.42	-0.06
16	54.0	0.39	-0.45	-0.06
17	57.6	0.45	-0.48	-0.03
18	61.2	0.48	-0.51	-0.03
19	64.8	0.51	-0.54	-0.03
20	68.4	0.53	-0.57	-0.04
21	72.0	0.55	-0.60	-0.05
22	75.6	0.58	-0.63	-0.05
23	79.2	0.60	-0.66	-0.06
24	82.8	0.57	-0.69	-0.12
25	86.4	0.56	-0.72	-0.16
26	90.0	0.53	-0.75	-0.22
27	93.6	0.50	-0.78	-0.28
28	97.2	0.50	-0.81	-0.31
29	100.8	0.49	-0.84	-0.35
30	104.4	0.47	-0.87	-0.40
31	108.0	0.49	-0.90	-0.41
32	111.6	0.45	-0.93	-0.48
33	115.2	0.46	-0.96	-0.50
34	118.8	0.49	-0.99	-0.50
35	122.4	0.48	-1.02	-0.54
36	126.0	0.49	-1.05	-0.56
37	129.6	0.50	-1.08	-0.58
38	133.2	0.50	-1.11	-0.61
39	136.8	0.48	-1.14	-0.66
40	140.4	0.49	-1.17	-0.68
41	144.0	0.44	-1.20	-0.76
42	147.6	0.35	-1.23	-0.88

Table 43.1: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2260+00, MSU St. 1

Point	Pavement Width (X)	Width Feet	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-12.6			
42	147.6	-12.3	0.36	-1.79	-1.43
41	144.0	-12.0	0.38	-1.75	-1.37
40	140.4	-11.7	0.42	-1.70	-1.28
39	136.8	-11.4	0.48	-1.66	-1.18
38	133.2	-11.1	0.43	-1.61	-1.18
37	129.6	-10.8	0.42	-1.57	-1.15
36	126.0	-10.5	0.40	-1.53	-1.13
35	122.4	-10.2	0.40	-1.48	-1.08
34	118.8	-9.9	0.37	-1.44	-1.07
33	115.2	-9.6	0.36	-1.40	-1.04
32	111.6	-9.3	0.32	-1.35	-1.03
31	108.0	-9.0	0.31	-1.31	-1.00
30	104.4	-8.7	0.32	-1.27	-0.95
29	100.8	-8.4	0.30	-1.22	-0.92
28	97.2	-8.1	0.29	-1.18	-0.89
27	93.6	-7.8	0.29	-1.13	-0.84
26	90.0	-7.5	0.27	-1.09	-0.82
25	86.4	-7.2	0.25	-1.05	-0.80
24	82.8	-6.9	0.23	-1.00	-0.77
23	79.2	-6.6	0.22	-0.96	-0.74
22	75.6	-6.3	0.21	-0.92	-0.71
21	72.0	-6.0	0.20	-0.87	-0.67
20	68.4	-5.7	0.17	-0.83	-0.66
19	64.8	-5.4	0.15	-0.79	-0.64
18	61.2	-5.1	0.14	-0.74	-0.60
17	57.6	-4.8	0.12	-0.70	-0.58
16	54.0	-4.5	0.11	-0.65	-0.54
15	50.4	-4.2	0.10	-0.61	-0.51
14	46.8	-3.9	0.10	-0.57	-0.47
13	43.2	-3.6	0.09	-0.52	-0.43
12	39.6	-3.3	0.08	-0.48	-0.40
11	36.0	-3.0	0.07	-0.44	-0.37
10	32.4	-2.7	0.06	-0.39	-0.33
9	28.8	-2.4	0.02	-0.35	-0.33
8	25.2	-2.1	0.04	-0.31	-0.27
7	21.6	-1.8	0.04	-0.26	-0.22
6	18.0	-1.5	0.03	-0.22	-0.19
5	14.4	-1.2	0.03	-0.17	-0.14
4	10.8	-0.9	0.05	-0.13	-0.08
3	7.2	-0.6	0.04	-0.09	-0.05
2	3.6	-0.3	0.04	-0.04	-0.00
1	0.0	0.0	0.00	0.00	0.00

2254+00, MSU St. 2

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
42	147.6	0.27	-1.90	-1.63
41	144.0	0.28	-1.85	-1.57
40	140.4	0.33	-1.81	-1.48
39	136.8	0.30	-1.76	-1.46
38	133.2	0.27	-1.72	-1.45
37	129.6	0.23	-1.67	-1.44
36	126.0	0.23	-1.62	-1.39
35	122.4	0.24	-1.58	-1.34
34	118.8	0.22	-1.53	-1.31
33	115.2	0.26	-1.48	-1.22
32	111.6	0.27	-1.44	-1.17
31	108.0	0.26	-1.39	-1.13
30	104.4	0.29	-1.34	-1.05
29	100.8	0.28	-1.30	-1.02
28	97.2	0.25	-1.25	-1.00
27	93.6	0.26	-1.21	-0.95
26	90.0	0.24	-1.16	-0.92
25	86.4	0.21	-1.11	-0.90
24	82.8	0.21	-1.07	-0.86
23	79.2	0.20	-1.02	-0.82
22	75.6	0.19	-0.97	-0.78
21	72.0	0.18	-0.93	-0.75
20	68.4	0.17	-0.88	-0.71
19	64.8	0.17	-0.83	-0.66
18	61.2	0.15	-0.79	-0.64
17	57.6	0.14	-0.74	-0.60
16	54.0	0.12	-0.70	-0.58
15	50.4	0.09	-0.65	-0.56
14	46.8	0.06	-0.60	-0.54
13	43.2	0.07	-0.56	-0.49
12	39.6	0.06	-0.51	-0.45
11	36.0	0.08	-0.46	-0.38
10	32.4	0.06	-0.42	-0.36
9	28.8	0.03	-0.37	-0.34
8	25.2	0.03	-0.32	-0.29
7	21.6	0.03	-0.28	-0.25
6	18.0	0.01	-0.23	-0.22
5	14.4	0.03	-0.19	-0.16
4	10.8	0.04	-0.14	-0.10
3	7.2	0.03	-0.09	-0.06
2	3.6	0.05	-0.05	0.00
1	0.0	0.00	0.00	0.00

Table 43.2: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2250+00, MSU St. 3

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.18	-1.83	-2.01
42	147.6	-0.15	-1.79	-1.94
41	144.0	-0.13	-1.75	-1.88
40	140.4	-0.10	-1.70	-1.80
39	136.8	-0.11	-1.66	-1.77
38	133.2	-0.10	-1.61	-1.71
37	129.6	-0.10	-1.57	-1.67
36	126.0	-0.10	-1.53	-1.63
35	122.4	-0.08	-1.48	-1.56
34	118.8	-0.07	-1.44	-1.51
33	115.2	-0.06	-1.40	-1.46
32	111.6	-0.02	-1.35	-1.37
31	108.0	0.00	-1.31	-1.31
30	104.4	0.03	-1.27	-1.24
29	100.8	0.05	-1.22	-1.17
28	97.2	0.04	-1.18	-1.14
27	93.6	0.03	-1.13	-1.10
26	90.0	0.04	-1.09	-1.05
25	86.4	0.03	-1.05	-1.02
24	82.8	0.03	-1.00	-0.97
23	79.2	0.02	-0.96	-0.94
22	75.6	0.01	-0.92	-0.91
21	72.0	-0.01	-0.87	-0.88
20	68.4	-0.05	-0.83	-0.88
19	64.8	-0.01	-0.79	-0.80
18	61.2	0.02	-0.74	-0.72
17	57.6	0.00	-0.70	-0.70
16	54.0	-0.03	-0.65	-0.68
15	50.4	-0.01	-0.61	-0.62
14	46.8	-0.05	-0.57	-0.62
13	43.2	-0.04	-0.52	-0.56
12	39.6	0.00	-0.48	-0.48
11	36.0	-0.01	-0.44	-0.45
10	32.4	-0.02	-0.39	-0.41
9	28.8	0.00	-0.35	-0.35
8	25.2	-0.02	-0.31	-0.33
7	21.6	-0.03	-0.26	-0.29
6	18.0	-0.01	-0.22	-0.23
5	14.4	0.00	-0.17	-0.17
4	10.8	0.00	-0.13	-0.13
3	7.2	0.02	-0.09	-0.07
2	3.6	0.01	-0.04	-0.03
1	0.0	0.00	0.00	0.00

2244+00, MSU St. 4

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.19	-2.18	-2.37
42	147.6	-0.08	-2.12	-2.20
41	144.0	-0.01	-2.07	-2.08
40	140.4	-0.07	-2.02	-2.09
39	136.8	-0.06	-1.97	-2.03
38	133.2	-0.07	-1.92	-1.99
37	129.6	-0.07	-1.87	-1.94
36	126.0	-0.04	-1.81	-1.85
35	122.4	-0.04	-1.76	-1.80
34	118.8	-0.04	-1.71	-1.75
33	115.2	-0.03	-1.66	-1.69
32	111.6	0.00	-1.61	-1.61
31	108.0	0.01	-1.55	-1.54
30	104.4	-0.02	-1.50	-1.52
29	100.8	0.01	-1.45	-1.44
28	97.2	0.00	-1.40	-1.40
27	93.6	0.02	-1.35	-1.33
26	90.0	0.03	-1.30	-1.27
25	86.4	0.02	-1.24	-1.22
24	82.8	0.01	-1.19	-1.18
23	79.2	0.02	-1.14	-1.12
22	75.6	0.03	-1.09	-1.06
21	72.0	-0.01	-1.04	-1.05
20	68.4	-0.01	-0.98	-0.99
19	64.8	0.00	-0.93	-0.93
18	61.2	-0.04	-0.88	-0.92
17	57.6	-0.03	-0.83	-0.86
16	54.0	-0.03	-0.78	-0.81
15	50.4	-0.05	-0.73	-0.78
14	46.8	-0.05	-0.67	-0.72
13	43.2	-0.04	-0.62	-0.66
12	39.6	-0.03	-0.57	-0.60
11	36.0	-0.02	-0.52	-0.54
10	32.4	-0.02	-0.47	-0.49
9	28.8	-0.03	-0.41	-0.44
8	25.2	-0.03	-0.36	-0.39
7	21.6	-0.05	-0.31	-0.36
6	18.0	-0.06	-0.26	-0.32
5	14.4	-0.01	-0.21	-0.22
4	10.8	0.00	-0.16	-0.16
3	7.2	-0.01	-0.10	-0.11
2	3.6	0.02	-0.05	-0.03
1	0.0	0.00	0.00	0.00

Table 43.3: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2238+00, MSU St. 5

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.19	-1.72	-1.91
42	147.6	-0.13	-1.68	-1.81
41	144.0	-0.13	-1.64	-1.77
40	140.4	-0.14	-1.60	-1.74
39	136.8	-0.12	-1.55	-1.67
38	133.2	-0.13	-1.51	-1.64
37	129.6	-0.14	-1.47	-1.61
36	126.0	-0.12	-1.43	-1.55
35	122.4	-0.10	-1.39	-1.49
34	118.8	-0.11	-1.35	-1.46
33	115.2	-0.09	-1.31	-1.40
32	111.6	-1.00	-1.27	-2.27
31	108.0	-0.08	-1.23	-1.31
30	104.4	-0.06	-1.19	-1.25
29	100.8	-0.03	-1.15	-1.18
28	97.2	-0.03	-1.10	-1.13
27	93.6	-0.01	-1.06	-1.07
26	90.0	-0.01	-1.02	-1.03
25	86.4	-0.02	-0.98	-1.00
24	82.8	0.00	-0.94	-0.94
23	79.2	0.01	-0.90	-0.89
22	75.6	0.01	-0.86	-0.85
21	72.0	0.03	-0.82	-0.79
20	68.4	0.02	-0.78	-0.76
19	64.8	0.02	-0.74	-0.72
18	61.2	0.03	-0.70	-0.67
17	57.6	0.04	-0.65	-0.61
16	54.0	0.03	-0.61	-0.58
15	50.4	0.04	-0.57	-0.53
14	46.8	0.03	-0.53	-0.50
13	43.2	0.02	-0.49	-0.47
12	39.6	0.04	-0.45	-0.41
11	36.0	0.06	-0.41	-0.35
10	32.4	0.05	-0.37	-0.32
9	28.8	0.06	-0.33	-0.27
8	25.2	0.05	-0.29	-0.24
7	21.6	0.03	-0.25	-0.22
6	18.0	0.03	-0.20	-0.17
5	14.4	0.03	-0.16	-0.13
4	10.8	0.03	-0.12	-0.09
3	7.2	0.03	-0.08	-0.05
2	3.6	0.04	-0.04	-0.00
1	0.0	0.00	0.00	0.00

2232+00, MSU St. 6

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	0.09	-1.83	-1.74
42	147.6	0.00	-1.79	-1.79
41	144.0	0.04	-1.75	-1.71
40	140.4	0.00	-1.70	-1.70
39	136.8	0.00	-1.66	-1.66
38	133.2	0.00	-1.61	-1.61
37	129.6	-0.01	-1.57	-1.58
36	126.0	0.00	-1.53	-1.53
35	122.4	0.02	-1.48	-1.46
34	118.8	0.01	-1.44	-1.43
33	115.2	0.04	-1.40	-1.36
32	111.6	0.05	-1.35	-1.30
31	108.0	0.05	-1.31	-1.26
30	104.4	0.07	-1.27	-1.20
29	100.8	0.08	-1.22	-1.14
28	97.2	0.09	-1.18	-1.09
27	93.6	0.10	-1.13	-1.03
26	90.0	0.08	-1.09	-1.01
25	86.4	0.07	-1.05	-0.98
24	82.8	0.08	-1.00	-0.92
23	79.2	0.06	-0.96	-0.90
22	75.6	0.03	-0.92	-0.89
21	72.0	0.03	-0.87	-0.84
20	68.4	0.01	-0.83	-0.82
19	64.8	0.00	-0.79	-0.79
18	61.2	0.00	-0.74	-0.74
17	57.6	-0.02	-0.70	-0.72
16	54.0	0.03	-0.65	-0.62
15	50.4	-0.03	-0.61	-0.64
14	46.8	-0.04	-0.57	-0.61
13	43.2	-0.01	-0.52	-0.53
12	39.6	-0.02	-0.48	-0.50
11	36.0	0.00	-0.44	-0.44
10	32.4	0.01	-0.39	-0.38
9	28.8	-0.01	-0.35	-0.36
8	25.2	-0.02	-0.31	-0.33
7	21.6	-0.01	-0.26	-0.27
6	18.0	-0.01	-0.22	-0.23
5	14.4	-0.01	-0.17	-0.18
4	10.8	0.01	-0.13	-0.12
3	7.2	0.02	-0.09	-0.07
2	3.6	0.05	-0.04	0.01
1	0.0	0.00	0.00	0.00

Table 43.4: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2226+00, MSU St. 7

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.11	-1.72	-1.83
42	147.6	0.00	-1.68	-1.68
41	144.0	-0.03	-1.64	-1.67
40	140.4	-0.04	-1.60	-1.64
39	136.8	-0.02	-1.55	-1.57
38	133.2	-0.03	-1.51	-1.54
37	129.6	-0.05	-1.47	-1.52
36	126.0	-0.02	-1.43	-1.45
35	122.4	0.00	-1.39	-1.39
34	118.8	0.00	-1.35	-1.35
33	115.2	0.04	-1.31	-1.27
32	111.6	0.03	-1.27	-1.24
31	108.0	0.00	-1.23	-1.23
30	104.4	0.02	-1.19	-1.17
29	100.8	0.01	-1.15	-1.14
28	97.2	-0.03	-1.10	-1.13
27	93.6	-0.03	-1.06	-1.09
26	90.0	-0.03	-1.02	-1.05
25	86.4	-0.04	-0.98	-1.02
24	82.8	-0.04	-0.94	-0.98
23	79.2	-0.07	-0.90	-0.97
22	75.6	-0.06	-0.86	-0.92
21	72.0	-0.05	-0.82	-0.87
20	68.4	-0.05	-0.78	-0.83
19	64.8	-0.10	-0.74	-0.84
18	61.2	-0.11	-0.70	-0.81
17	57.6	-0.13	-0.65	-0.78
16	54.0	-0.15	-0.61	-0.76
15	50.4	-0.16	-0.57	-0.73
14	46.8	-0.16	-0.53	-0.69
13	43.2	-0.13	-0.49	-0.62
12	39.6	-0.14	-0.45	-0.59
11	36.0	-0.14	-0.41	-0.55
10	32.4	-0.13	-0.37	-0.50
9	28.8	-0.13	-0.33	-0.46
8	25.2	-0.11	-0.29	-0.40
7	21.6	-0.12	-0.25	-0.37
6	18.0	-0.11	-0.20	-0.31
5	14.4	-0.10	-0.16	-0.26
4	10.8	-0.08	-0.12	-0.20
3	7.2	-0.04	-0.08	-0.12
2	3.6	0.01	-0.04	-0.03
1	0.0	0.00	0.00	0.00

2220+00, MSU St. 8

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.09	-1.95	-2.04
42	147.6	0.00	-1.90	-1.90
41	144.0	0.05	-1.85	-1.80
40	140.4	0.05	-1.81	-1.76
39	136.8	0.03	-1.76	-1.73
38	133.2	0.04	-1.72	-1.68
37	129.6	0.07	-1.67	-1.60
36	126.0	0.05	-1.62	-1.57
35	122.4	0.05	-1.58	-1.53
34	118.8	0.03	-1.53	-1.50
33	115.2	-0.01	-1.48	-1.49
32	111.6	0.00	-1.44	-1.44
31	108.0	0.00	-1.39	-1.39
30	104.4	0.01	-1.34	-1.33
29	100.8	0.01	-1.30	-1.29
28	97.2	0.00	-1.25	-1.25
27	93.6	0.00	-1.21	-1.21
26	90.0	0.00	-1.16	-1.16
25	86.4	-0.02	-1.11	-1.13
24	82.8	0.00	-1.07	-1.07
23	79.2	0.00	-1.02	-1.02
22	75.6	-0.07	-0.97	-1.04
21	72.0	-0.06	-0.93	-0.99
20	68.4	-0.08	-0.88	-0.96
19	64.8	-0.08	-0.83	-0.91
18	61.2	-0.06	-0.79	-0.85
17	57.6	-0.08	-0.74	-0.82
16	54.0	-0.10	-0.70	-0.80
15	50.4	-0.07	-0.65	-0.72
14	46.8	-0.09	-0.60	-0.69
13	43.2	-0.09	-0.56	-0.65
12	39.6	-0.07	-0.51	-0.58
11	36.0	-0.08	-0.46	-0.54
10	32.4	-1.00	-0.42	-1.42
9	28.8	-0.11	-0.37	-0.48
8	25.2	-0.10	-0.32	-0.42
7	21.6	-0.10	-0.28	-0.38
6	18.0	-0.09	-0.23	-0.32
5	14.4	-0.05	-0.19	-0.24
4	10.8	-0.03	-0.14	-0.17
3	7.2	-0.04	-0.09	-0.13
2	3.6	-0.07	-0.05	-0.12
1	0.0	0.00	0.00	0.00

Table 43.5: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2214+00, MSU St. 9

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	0.04	-1.95	-1.91
42	147.6	-0.01	-1.90	-1.91
41	144.0	-0.04	-1.85	-1.89
40	140.4	-0.03	-1.81	-1.84
39	136.8	-0.02	-1.76	-1.78
38	133.2	0.00	-1.72	-1.72
37	129.6	-0.02	-1.67	-1.69
36	126.0	0.00	-1.62	-1.62
35	122.4	0.04	-1.58	-1.54
34	118.8	0.05	-1.53	-1.48
33	115.2	0.06	-1.48	-1.42
32	111.6	0.08	-1.44	-1.36
31	108.0	0.10	-1.39	-1.29
30	104.4	0.09	-1.34	-1.25
29	100.8	0.09	-1.30	-1.21
28	97.2	0.08	-1.25	-1.17
27	93.6	0.09	-1.21	-1.12
26	90.0	0.08	-1.16	-1.08
25	86.4	0.07	-1.11	-1.04
24	82.8	0.09	-1.07	-0.98
23	79.2	0.10	-1.02	-0.92
22	75.6	0.08	-0.97	-0.89
21	72.0	0.10	-0.93	-0.83
20	68.4	0.10	-0.88	-0.78
19	64.8	0.07	-0.83	-0.76
18	61.2	0.08	-0.79	-0.71
17	57.6	0.06	-0.74	-0.68
16	54.0	0.07	-0.70	-0.63
15	50.4	0.10	-0.65	-0.55
14	46.8	0.08	-0.60	-0.52
13	43.2	0.09	-0.56	-0.47
12	39.6	0.10	-0.51	-0.41
11	36.0	0.10	-0.46	-0.36
10	32.4	0.09	-0.42	-0.33
9	28.8	0.09	-0.37	-0.28
8	25.2	0.08	-0.32	-0.24
7	21.6	0.08	-0.28	-0.20
6	18.0	0.08	-0.23	-0.15
5	14.4	0.09	-0.19	-0.10
4	10.8	0.10	-0.14	-0.04
3	7.2	0.03	-0.09	-0.06
2	3.6	0.04	-0.05	-0.01
1	0.0	0.00	0.00	0.00

2208+00, MSU St. 10

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.14	-2.06	-2.20
42	147.6	-0.18	-2.01	-2.19
41	144.0	-0.16	-1.96	-2.12
40	140.4	-0.20	-1.91	-2.11
39	136.8	-0.21	-1.87	-2.08
38	133.2	-0.22	-1.82	-2.04
37	129.6	-0.21	-1.77	-1.98
36	126.0	-0.22	-1.72	-1.94
35	122.4	-0.20	-1.67	-1.87
34	118.8	-0.20	-1.62	-1.82
33	115.2	-0.19	-1.57	-1.76
32	111.6	-0.20	-1.52	-1.72
31	108.0	-0.19	-1.47	-1.66
30	104.4	-0.17	-1.42	-1.59
29	100.8	-0.18	-1.37	-1.55
28	97.2	-0.17	-1.33	-1.50
27	93.6	-0.14	-1.28	-1.42
26	90.0	-0.17	-1.23	-1.40
25	86.4	-0.18	-1.18	-1.36
24	82.8	-0.20	-1.13	-1.33
23	79.2	-0.22	-1.08	-1.30
22	75.6	-0.21	-1.03	-1.24
21	72.0	-0.20	-0.98	-1.18
20	68.4	-0.20	-0.93	-1.13
19	64.8	-0.22	-0.88	-1.10
18	61.2	-0.20	-0.83	-1.03
17	57.6	-0.23	-0.79	-1.02
16	54.0	-0.22	-0.74	-0.96
15	50.4	-0.21	-0.69	-0.90
14	46.8	-0.18	-0.64	-0.82
13	43.2	-0.20	-0.59	-0.79
12	39.6	-0.19	-0.54	-0.73
11	36.0	-0.18	-0.49	-0.67
10	32.4	-0.18	-0.44	-0.62
9	28.8	-0.16	-0.39	-0.55
8	25.2	-0.13	-0.34	-0.47
7	21.6	-0.11	-0.29	-0.40
6	18.0	-0.10	-0.25	-0.35
5	14.4	-0.06	-0.20	-0.26
4	10.8	-0.03	-0.15	-0.18
3	7.2	-0.03	-0.10	-0.13
2	3.6	-0.04	-0.05	-0.09
1	0.0	0.00	0.00	0.00

Table 43.6: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2200+00, MSU St. 11

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
42	147.6	-0.09	-1.57	-1.66
41	144.0	-0.15	-1.53	-1.68
40	140.4	-0.17	-1.49	-1.66
39	136.8	-0.18	-1.45	-1.63
38	133.2	-0.18	-1.41	-1.59
37	129.6	-0.17	-1.37	-1.54
36	126.0	-0.15	-1.34	-1.49
35	122.4	-0.12	-1.30	-1.42
34	118.8	-0.12	-1.26	-1.38
33	115.2	-0.10	-1.22	-1.32
32	111.6	-0.09	-1.18	-1.27
31	108.0	-0.08	-1.15	-1.23
30	104.4	-0.05	-1.11	-1.16
29	100.8	-0.03	-1.07	-1.10
28	97.2	-0.02	-1.03	-1.05
27	93.6	0.00	-0.99	-0.99
26	90.0	0.00	-0.95	-0.95
25	86.4	0.00	-0.92	-0.92
24	82.8	0.02	-0.88	-0.86
23	79.2	0.02	-0.84	-0.82
22	75.6	0.00	-0.80	-0.80
21	72.0	0.00	-0.76	-0.76
20	68.4	-0.01	-0.73	-0.74
19	64.8	-0.05	-0.69	-0.74
18	61.2	0.00	-0.65	-0.65
17	57.6	-0.03	-0.61	-0.64
16	54.0	-0.07	-0.57	-0.64
15	50.4	-0.01	-0.53	-0.54
14	46.8	-0.02	-0.50	-0.52
13	43.2	-0.04	-0.46	-0.50
12	39.6	-0.01	-0.42	-0.43
11	36.0	-0.01	-0.38	-0.39
10	32.4	-0.01	-0.34	-0.35
9	28.8	0.01	-0.31	-0.30
8	25.2	-0.03	-0.27	-0.30
7	21.6	-0.02	-0.23	-0.25
6	18.0	0.00	-0.19	-0.19
5	14.4	0.00	-0.15	-0.15
4	10.8	0.03	-0.11	-0.08
3	7.2	0.00	-0.08	-0.08
2	3.6	-0.10	-0.04	-0.14
1	0.0	0.00	0.00	0.00

2196+00, MSU St. 12

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	0.31	-1.72	-1.41
42	147.6	0.37	-1.68	-1.31
41	144.0	0.26	-1.64	-1.38
40	140.4	0.25	-1.60	-1.35
39	136.8	0.21	-1.55	-1.34
38	133.2	0.21	-1.51	-1.30
37	129.6	0.22	-1.47	-1.25
36	126.0	0.19	-1.43	-1.24
35	122.4	0.20	-1.39	-1.19
34	118.8	0.20	-1.35	-1.15
33	115.2	0.20	-1.31	-1.11
32	111.6	0.24	-1.27	-1.03
31	108.0	0.25	-1.23	-0.98
30	104.4	0.25	-1.19	-0.94
29	100.8	0.26	-1.15	-0.89
28	97.2	0.23	-1.10	-0.87
27	93.6	0.23	-1.06	-0.83
26	90.0	0.24	-1.02	-0.78
25	86.4	0.21	-0.98	-0.77
24	82.8	0.21	-0.94	-0.73
23	79.2	0.20	-0.90	-0.70
22	75.6	0.14	-0.86	-0.72
21	72.0	0.14	-0.82	-0.68
20	68.4	0.12	-0.78	-0.66
19	64.8	0.09	-0.74	-0.65
18	61.2	0.09	-0.70	-0.61
17	57.6	0.07	-0.65	-0.58
16	54.0	0.03	-0.61	-0.58
15	50.4	0.02	-0.57	-0.55
14	46.8	0.02	-0.53	-0.51
13	43.2	0.01	-0.49	-0.48
12	39.6	0.03	-0.45	-0.42
11	36.0	0.02	-0.41	-0.39
10	32.4	0.00	-0.37	-0.37
9	28.8	0.00	-0.33	-0.33
8	25.2	-0.03	-0.29	-0.32
7	21.6	-0.02	-0.25	-0.27
6	18.0	0.00	-0.20	-0.20
5	14.4	-0.04	-0.16	-0.20
4	10.8	-0.05	-0.12	-0.17
3	7.2	-0.04	-0.08	-0.12
2	3.6	-0.02	-0.04	-0.06
1	0.0	0.00	0.00	0.00

Table 43.7: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2192+00, MSU St. 13

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.04	-1.95	-1.99
42	147.6	-0.01	-1.90	-1.91
41	144.0	0.00	-1.85	-1.85
40	140.4	0.07	-1.81	-1.74
39	136.8	0.04	-1.76	-1.72
38	133.2	0.05	-1.72	-1.67
37	129.6	0.03	-1.67	-1.64
36	126.0	-0.03	-1.62	-1.65
35	122.4	-0.07	-1.58	-1.65
34	118.8	0.00	-1.53	-1.53
33	115.2	-0.02	-1.48	-1.50
32	111.6	-0.01	-1.44	-1.45
31	108.0	0.01	-1.39	-1.38
30	104.4	0.03	-1.34	-1.31
29	100.8	0.05	-1.30	-1.25
28	97.2	0.07	-1.25	-1.18
27	93.6	0.10	-1.21	-1.11
26	90.0	0.10	-1.16	-1.06
25	86.4	0.06	-1.11	-1.05
24	82.8	0.08	-1.07	-0.99
23	79.2	0.08	-1.02	-0.94
22	75.6	0.07	-0.97	-0.90
21	72.0	0.07	-0.93	-0.86
20	68.4	0.06	-0.88	-0.82
19	64.8	0.00	-0.83	-0.83
18	61.2	-0.02	-0.79	-0.81
17	57.6	-0.04	-0.74	-0.78
16	54.0	-0.08	-0.70	-0.78
15	50.4	-0.09	-0.65	-0.74
14	46.8	-0.10	-0.60	-0.70
13	43.2	-0.12	-0.56	-0.68
12	39.6	-0.11	-0.51	-0.62
11	36.0	-0.10	-0.46	-0.56
10	32.4	-0.10	-0.42	-0.52
9	28.8	-0.09	-0.37	-0.46
8	25.2	-0.08	-0.32	-0.40
7	21.6	-0.10	-0.28	-0.38
6	18.0	-0.09	-0.23	-0.32
5	14.4	-0.08	-0.19	-0.27
4	10.8	-0.07	-0.14	-0.21
3	7.2	-0.05	-0.09	-0.14
2	3.6	-0.02	-0.05	-0.07
1	0.0	0.00	0.00	0.00

2188+00, MSU St. 14

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
44	154.8	-0.12	-1.88	-2.00
43	151.2	-0.10	-1.83	-1.93
42	147.6	-0.07	-1.79	-1.86
41	144.0	-0.05	-1.75	-1.80
40	140.4	0.00	-1.70	-1.70
39	136.8	-0.04	-1.66	-1.70
38	133.2	-0.07	-1.61	-1.68
37	129.6	-0.07	-1.57	-1.64
36	126.0	-0.06	-1.53	-1.59
35	122.4	-0.09	-1.48	-1.57
34	118.8	-0.07	-1.44	-1.51
33	115.2	-0.05	-1.40	-1.45
32	111.6	-0.04	-1.35	-1.39
31	108.0	-0.02	-1.31	-1.33
30	104.4	0.00	-1.27	-1.27
29	100.8	0.02	-1.22	-1.20
28	97.2	0.04	-1.18	-1.14
27	93.6	0.04	-1.13	-1.09
26	90.0	0.05	-1.09	-1.04
25	86.4	0.04	-1.05	-1.01
24	82.8	0.04	-1.00	-0.96
23	79.2	0.01	-0.96	-0.95
22	75.6	0.00	-0.92	-0.92
21	72.0	0.00	-0.87	-0.87
20	68.4	0.00	-0.83	-0.83
19	64.8	0.00	-0.79	-0.79
18	61.2	-0.02	-0.74	-0.76
17	57.6	-0.02	-0.70	-0.72
16	54.0	-0.06	-0.65	-0.71
15	50.4	-0.06	-0.61	-0.67
14	46.8	-0.09	-0.57	-0.66
13	43.2	-0.08	-0.52	-0.60
12	39.6	-0.06	-0.48	-0.54
11	36.0	-0.05	-0.44	-0.49
10	32.4	-0.04	-0.39	-0.43
9	28.8	-0.02	-0.35	-0.37
8	25.2	-0.01	-0.31	-0.32
7	21.6	-0.03	-0.26	-0.29
6	18.0	0.00	-0.22	-0.22
5	14.4	-0.01	-0.17	-0.18
4	10.8	-0.01	-0.13	-0.14
3	7.2	0.02	-0.09	-0.07
2	3.6	0.02	-0.04	-0.02
1	0.0	0.00	0.00	0.00

Table 43.8: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2184+00, MSU St. 15

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
41	144.0	-0.10	-1.42	-1.52
40	140.4	-0.10	-1.38	-1.48
39	136.8	-0.04	-1.35	-1.39
38	133.2	-0.11	-1.31	-1.42
37	129.6	-0.12	-1.28	-1.40
36	126.0	-0.13	-1.24	-1.37
35	122.4	-0.16	-1.21	-1.37
34	118.8	-0.14	-1.17	-1.31
33	115.2	-0.12	-1.13	-1.25
32	111.6	-0.09	-1.10	-1.19
31	108.0	-0.06	-1.06	-1.12
30	104.4	-0.05	-1.03	-1.08
29	100.8	-0.03	-0.99	-1.02
28	97.2	0.00	-0.96	-0.96
27	93.6	0.00	-0.92	-0.92
26	90.0	0.01	-0.89	-0.88
25	86.4	0.04	-0.85	-0.81
24	82.8	0.03	-0.82	-0.79
23	79.2	0.05	-0.78	-0.73
22	75.6	0.08	-0.74	-0.66
21	72.0	0.06	-0.71	-0.65
20	68.4	0.03	-0.67	-0.64
19	64.8	0.03	-0.64	-0.61
18	61.2	-0.01	-0.60	-0.61
17	57.6	-0.04	-0.57	-0.61
16	54.0	-0.06	-0.53	-0.59
15	50.4	-0.10	-0.50	-0.60
14	46.8	-0.08	-0.46	-0.54
13	43.2	-0.04	-0.43	-0.47
12	39.6	-0.04	-0.39	-0.43
11	36.0	-0.02	-0.35	-0.37
10	32.4	-0.01	-0.32	-0.33
9	28.8	-0.02	-0.28	-0.30
8	25.2	0.00	-0.25	-0.25
7	21.6	0.00	-0.21	-0.21
6	18.0	0.00	-0.18	-0.18
5	14.4	0.00	-0.14	-0.14
4	10.8	0.00	-0.11	-0.11
3	7.2	0.00	-0.07	-0.07
2	3.6	0.02	-0.04	-0.02
1	0.0	0.00	0.00	0.00

2180+00, MSU St. 16

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
41	144.0	-0.14	-1.42	-1.56
40	140.4	-0.17	-1.38	-1.55
39	136.8	-0.16	-1.35	-1.51
38	133.2	-0.17	-1.31	-1.48
37	129.6	-0.16	-1.28	-1.44
36	126.0	-0.12	-1.24	-1.36
35	122.4	-0.12	-1.21	-1.33
34	118.8	-0.10	-1.17	-1.27
33	115.2	-0.05	-1.13	-1.18
32	111.6	-0.02	-1.10	-1.12
31	108.0	-0.03	-1.06	-1.09
30	104.4	0.02	-1.03	-1.01
29	100.8	0.04	-0.99	-0.95
28	97.2	0.05	-0.96	-0.91
27	93.6	0.07	-0.92	-0.85
26	90.0	0.05	-0.89	-0.84
25	86.4	0.05	-0.85	-0.80
24	82.8	0.04	-0.82	-0.78
23	79.2	0.03	-0.78	-0.75
22	75.6	0.02	-0.74	-0.72
21	72.0	0.00	-0.71	-0.71
20	68.4	0.02	-0.67	-0.65
19	64.8	0.01	-0.64	-0.63
18	61.2	0.00	-0.60	-0.60
17	57.6	-0.01	-0.57	-0.58
16	54.0	-0.01	-0.53	-0.54
15	50.4	-0.01	-0.50	-0.51
14	46.8	0.00	-0.46	-0.46
13	43.2	0.01	-0.43	-0.42
12	39.6	0.00	-0.39	-0.39
11	36.0	0.03	-0.35	-0.32
10	32.4	0.03	-0.32	-0.29
9	28.8	0.03	-0.28	-0.25
8	25.2	0.04	-0.25	-0.21
7	21.6	0.06	-0.21	-0.15
6	18.0	0.03	-0.18	-0.15
5	14.4	0.05	-0.14	-0.09
4	10.8	0.05	-0.11	-0.06
3	7.2	0.01	-0.07	-0.06
2	3.6	0.00	-0.04	-0.04
1	0.0	0.00	0.00	0.00

Table 43.9: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2176+00, MSU St. 17

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	0.03	-1.15	-1.12
42	147.6	0.06	-1.12	-1.06
41	144.0	0.10	-1.09	-0.99
40	140.4	0.07	-1.06	-0.99
39	136.8	0.06	-1.04	-0.98
38	133.2	0.03	-1.01	-0.98
37	129.6	0.00	-0.98	-0.98
36	126.0	0.01	-0.95	-0.94
35	122.4	0.00	-0.93	-0.93
34	118.8	0.00	-0.90	-0.90
33	115.2	0.04	-0.87	-0.83
32	111.6	0.07	-0.85	-0.78
31	108.0	0.10	-0.82	-0.72
30	104.4	0.15	-0.79	-0.64
29	100.8	0.17	-0.76	-0.59
28	97.2	0.17	-0.74	-0.57
27	93.6	0.20	-0.71	-0.51
26	90.0	0.20	-0.68	-0.48
25	86.4	0.20	-0.65	-0.45
24	82.8	0.20	-0.63	-0.43
23	79.2	0.20	-0.60	-0.40
22	75.6	0.20	-0.57	-0.37
21	72.0	0.19	-0.55	-0.36
20	68.4	0.16	-0.52	-0.36
19	64.8	0.13	-0.49	-0.36
18	61.2	0.10	-0.46	-0.36
17	57.6	0.10	-0.44	-0.34
16	54.0	0.07	-0.41	-0.34
15	50.4	0.05	-0.38	-0.33
14	46.8	0.08	-0.35	-0.27
13	43.2	0.08	-0.33	-0.25
12	39.6	0.10	-0.30	-0.20
11	36.0	0.09	-0.27	-0.18
10	32.4	0.10	-0.25	-0.15
9	28.8	0.09	-0.22	-0.13
8	25.2	0.07	-0.19	-0.12
7	21.6	0.10	-0.16	-0.06
6	18.0	0.08	-0.14	-0.06
5	14.4	0.10	-0.11	-0.01
4	10.8	0.13	-0.08	0.05
3	7.2	0.12	-0.05	0.07
2	3.6	0.10	-0.03	0.07
1	0.0	0.00	0.00	0.00

2170+00, MSU St. 18

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.20	-0.92	-1.12
42	147.6	-0.26	-0.89	-1.15
41	144.0	-0.24	-0.87	-1.11
40	140.4	-0.25	-0.85	-1.10
39	136.8	-0.29	-0.83	-1.12
38	133.2	-0.24	-0.81	-1.05
37	129.6	-0.26	-0.79	-1.05
36	126.0	-0.23	-0.76	-0.99
35	122.4	-0.22	-0.74	-0.96
34	118.8	-0.21	-0.72	-0.93
33	115.2	-0.20	-0.70	-0.90
32	111.6	-0.17	-0.68	-0.85
31	108.0	-0.17	-0.65	-0.82
30	104.4	-0.14	-0.63	-0.77
29	100.8	-0.18	-0.61	-0.79
28	97.2	-0.17	-0.59	-0.76
27	93.6	-0.15	-0.57	-0.72
26	90.0	-0.16	-0.55	-0.71
25	86.4	-0.18	-0.52	-0.70
24	82.8	-0.18	-0.50	-0.68
23	79.2	-0.19	-0.48	-0.67
22	75.6	-0.17	-0.46	-0.63
21	72.0	-0.20	-0.44	-0.64
20	68.4	-0.20	-0.41	-0.61
19	64.8	-0.21	-0.39	-0.60
18	61.2	-0.19	-0.37	-0.56
17	57.6	-0.19	-0.35	-0.54
16	54.0	-0.19	-0.33	-0.52
15	50.4	-0.18	-0.31	-0.49
14	46.8	-0.16	-0.28	-0.44
13	43.2	-0.17	-0.26	-0.43
12	39.6	-0.15	-0.24	-0.39
11	36.0	-0.12	-0.22	-0.34
10	32.4	-0.12	-0.20	-0.32
9	28.8	-0.14	-0.17	-0.31
8	25.2	-0.13	-0.15	-0.28
7	21.6	-0.11	-0.13	-0.24
6	18.0	-0.11	-0.11	-0.22
5	14.4	-0.06	-0.09	-0.15
4	10.8	-0.02	-0.07	-0.09
3	7.2	-0.01	-0.04	-0.05
2	3.6	0.00	-0.02	-0.02
1	0.0	0.00	0.00	0.00

Table 43.10: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2164+00, MSU St. 19

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	0.13	-0.92	-0.79
42	147.6	0.06	-0.89	-0.83
41	144.0	0.10	-0.87	-0.77
40	140.4	0.09	-0.85	-0.76
39	136.8	0.10	-0.83	-0.73
38	133.2	0.09	-0.81	-0.72
37	129.6	0.08	-0.79	-0.71
36	126.0	0.10	-0.76	-0.66
35	122.4	0.04	-0.74	-0.70
34	118.8	0.03	-0.72	-0.69
33	115.2	0.00	-0.70	-0.70
32	111.6	0.01	-0.68	-0.67
31	108.0	0.01	-0.65	-0.64
30	104.4	0.03	-0.63	-0.60
29	100.8	0.06	-0.61	-0.55
28	97.2	0.05	-0.59	-0.54
27	93.6	0.08	-0.57	-0.49
26	90.0	0.07	-0.55	-0.48
25	86.4	0.07	-0.52	-0.45
24	82.8	0.09	-0.50	-0.41
23	79.2	0.10	-0.48	-0.38
22	75.6	0.09	-0.46	-0.37
21	72.0	0.09	-0.44	-0.35
20	68.4	0.01	-0.41	-0.40
19	64.8	0.00	-0.39	-0.39
18	61.2	-0.03	-0.37	-0.40
17	57.6	-0.01	-0.35	-0.36
16	54.0	0.01	-0.33	-0.32
15	50.4	-0.02	-0.31	-0.33
14	46.8	0.00	-0.28	-0.28
13	43.2	0.01	-0.26	-0.25
12	39.6	0.00	-0.24	-0.24
11	36.0	0.00	-0.22	-0.22
10	32.4	0.01	-0.20	-0.19
9	28.8	0.00	-0.17	-0.17
8	25.2	0.01	-0.15	-0.14
7	21.6	0.00	-0.13	-0.13
6	18.0	0.02	-0.11	-0.09
5	14.4	0.04	-0.09	-0.05
4	10.8	0.03	-0.07	-0.04
3	7.2	-0.03	-0.04	-0.07
2	3.6	0.03	-0.02	0.01
1	0.0	0.00	0.00	0.00

2160+00, MSU St. 20

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
42	147.6	0.10	-1.90	-1.80
41	144.0	0.10	-1.85	-1.75
40	140.4	0.10	-1.81	-1.71
39	136.8	0.10	-1.76	-1.66
38	133.2	0.08	-1.72	-1.64
37	129.6	0.10	-1.67	-1.57
36	126.0	0.10	-1.62	-1.52
35	122.4	0.09	-1.58	-1.49
34	118.8	0.11	-1.53	-1.42
33	115.2	0.11	-1.48	-1.37
32	111.6	0.10	-1.44	-1.34
31	108.0	0.12	-1.39	-1.27
30	104.4	0.10	-1.34	-1.24
29	100.8	0.10	-1.30	-1.20
28	97.2	0.10	-1.25	-1.15
27	93.6	0.09	-1.21	-1.12
26	90.0	0.10	-1.16	-1.06
25	86.4	0.10	-1.11	-1.01
24	82.8	0.10	-1.07	-0.97
23	79.2	0.10	-1.02	-0.92
22	75.6	0.10	-0.97	-0.87
21	72.0	0.11	-0.93	-0.82
20	68.4	0.14	-0.88	-0.74
19	64.8	0.10	-0.83	-0.73
18	61.2	0.06	-0.79	-0.73
17	57.6	0.05	-0.74	-0.69
16	54.0	0.03	-0.70	-0.67
15	50.4	0.05	-0.65	-0.60
14	46.8	0.04	-0.60	-0.56
13	43.2	0.04	-0.56	-0.52
12	39.6	0.05	-0.51	-0.46
11	36.0	0.03	-0.46	-0.43
10	32.4	0.00	-0.42	-0.42
9	28.8	0.04	-0.37	-0.33
8	25.2	0.05	-0.32	-0.27
7	21.6	0.07	-0.28	-0.21
6	18.0	0.12	-0.23	-0.11
5	14.4	0.13	-0.19	-0.06
4	10.8	0.10	-0.14	-0.04
3	7.2	0.07	-0.09	-0.02
2	3.6	0.01	-0.05	-0.04
1	0.0	0.00	0.00	0.00

Table 43.11: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2154+00, MSU St. 21

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
42	147.6	0.04	-1.79	-1.75
41	144.0	0.00	-1.75	-1.75
40	140.4	-0.01	-1.70	-1.71
39	136.8	-0.03	-1.66	-1.69
38	133.2	-0.04	-1.61	-1.65
37	129.6	-0.02	-1.57	-1.59
36	126.0	-0.01	-1.53	-1.54
35	122.4	-0.01	-1.48	-1.49
34	118.8	0.02	-1.44	-1.42
33	115.2	0.02	-1.40	-1.38
32	111.6	0.03	-1.35	-1.32
31	108.0	0.05	-1.31	-1.26
30	104.4	0.06	-1.27	-1.21
29	100.8	0.07	-1.22	-1.15
28	97.2	0.09	-1.18	-1.09
27	93.6	0.08	-1.13	-1.05
26	90.0	0.08	-1.09	-1.01
25	86.4	0.08	-1.05	-0.97
24	82.8	0.06	-1.00	-0.94
23	79.2	0.06	-0.96	-0.90
22	75.6	0.05	-0.92	-0.87
21	72.0	0.05	-0.87	-0.82
20	68.4	0.03	-0.83	-0.80
19	64.8	0.02	-0.79	-0.77
18	61.2	0.03	-0.74	-0.71
17	57.6	0.03	-0.70	-0.67
16	54.0	0.03	-0.65	-0.62
15	50.4	0.03	-0.61	-0.58
14	46.8	0.05	-0.57	-0.52
13	43.2	0.04	-0.52	-0.48
12	39.6	0.07	-0.48	-0.41
11	36.0	0.08	-0.44	-0.36
10	32.4	0.05	-0.39	-0.34
9	28.8	0.06	-0.35	-0.29
8	25.2	0.07	-0.31	-0.24
7	21.6	0.04	-0.26	-0.22
6	18.0	0.07	-0.22	-0.15
5	14.4	0.06	-0.17	-0.11
4	10.8	0.05	-0.13	-0.08
3	7.2	0.06	-0.09	-0.03
2	3.6	0.00	-0.04	-0.04
1	0.0	0.00	0.00	0.00

2150+00, MSU St. 22

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.12	-2.06	-2.18
42	147.6	-0.03	-2.01	-2.04
41	144.0	-0.07	-1.96	-2.03
40	140.4	-0.07	-1.91	-1.98
39	136.8	-0.04	-1.87	-1.91
38	133.2	-0.03	-1.82	-1.85
37	129.6	-0.02	-1.77	-1.79
36	126.0	0.02	-1.72	-1.70
35	122.4	0.04	-1.67	-1.63
34	118.8	0.03	-1.62	-1.59
33	115.2	0.06	-1.57	-1.51
32	111.6	0.10	-1.52	-1.42
31	108.0	0.10	-1.47	-1.37
30	104.4	0.11	-1.42	-1.31
29	100.8	0.13	-1.37	-1.24
28	97.2	0.12	-1.33	-1.21
27	93.6	0.13	-1.28	-1.15
26	90.0	0.11	-1.23	-1.12
25	86.4	0.12	-1.18	-1.06
24	82.8	0.13	-1.13	-1.00
23	79.2	0.10	-1.08	-0.98
22	75.6	0.08	-1.03	-0.95
21	72.0	0.10	-0.98	-0.88
20	68.4	0.08	-0.93	-0.85
19	64.8	0.10	-0.88	-0.78
18	61.2	0.08	-0.83	-0.75
17	57.6	0.08	-0.79	-0.71
16	54.0	0.10	-0.74	-0.64
15	50.4	0.08	-0.69	-0.61
14	46.8	0.08	-0.64	-0.56
13	43.2	0.09	-0.59	-0.50
12	39.6	0.07	-0.54	-0.47
11	36.0	0.07	-0.49	-0.42
10	32.4	0.07	-0.44	-0.37
9	28.8	0.08	-0.39	-0.31
8	25.2	0.07	-0.34	-0.27
7	21.6	0.07	-0.29	-0.22
6	18.0	0.07	-0.25	-0.18
5	14.4	0.09	-0.20	-0.11
4	10.8	0.08	-0.15	-0.07
3	7.2	0.06	-0.10	-0.04
2	3.6	0.04	-0.05	-0.01
1	0.0	0.00	0.00	0.00

Table 43.12: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2144+00, MSU St. 23

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
41	144.0	0.10	-1.20	-1.10
40	140.4	0.02	-1.17	-1.15
39	136.8	0.01	-1.14	-1.13
38	133.2	0.02	-1.11	-1.09
37	129.6	0.02	-1.08	-1.06
36	126.0	0.03	-1.05	-1.02
35	122.4	0.05	-1.02	-0.97
34	118.8	0.04	-0.99	-0.95
33	115.2	0.06	-0.96	-0.90
32	111.6	0.07	-0.93	-0.86
31	108.0	0.04	-0.90	-0.86
30	104.4	0.05	-0.87	-0.82
29	100.8	0.04	-0.84	-0.80
28	97.2	0.03	-0.81	-0.78
27	93.6	0.03	-0.78	-0.75
26	90.0	0.03	-0.75	-0.72
25	86.4	0.03	-0.72	-0.69
24	82.8	0.04	-0.69	-0.65
23	79.2	0.05	-0.66	-0.61
22	75.6	0.03	-0.63	-0.60
21	72.0	0.03	-0.60	-0.57
20	68.4	0.00	-0.57	-0.57
19	64.8	0.00	-0.54	-0.54
18	61.2	0.00	-0.51	-0.51
17	57.6	-0.01	-0.48	-0.49
16	54.0	-0.02	-0.45	-0.47
15	50.4	-0.01	-0.42	-0.43
14	46.8	0.00	-0.39	-0.39
13	43.2	0.00	-0.36	-0.36
12	39.6	0.00	-0.33	-0.33
11	36.0	0.04	-0.30	-0.26
10	32.4	0.05	-0.27	-0.22
9	28.8	0.06	-0.24	-0.18
8	25.2	0.09	-0.21	-0.12
7	21.6	0.11	-0.18	-0.07
6	18.0	0.14	-0.15	-0.01
5	14.4	0.18	-0.12	0.06
4	10.8	0.20	-0.09	0.11
3	7.2	0.13	-0.06	0.07
2	3.6	0.10	-0.03	0.07
1	0.0	0.00	0.00	0.00

2138+00, MSU St. 24

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
40	140.4	0.20	-1.70	-1.50
39	136.8	0.18	-1.66	-1.48
38	133.2	0.20	-1.61	-1.41
37	129.6	0.19	-1.57	-1.38
36	126.0	0.19	-1.53	-1.34
35	122.4	0.20	-1.48	-1.28
34	118.8	0.21	-1.44	-1.23
33	115.2	0.23	-1.40	-1.17
32	111.6	0.24	-1.35	-1.11
31	108.0	0.25	-1.31	-1.06
30	104.4	0.26	-1.27	-1.01
29	100.8	0.27	-1.22	-0.95
28	97.2	0.25	-1.18	-0.93
27	93.6	0.21	-1.13	-0.92
26	90.0	0.21	-1.09	-0.88
25	86.4	0.20	-1.05	-0.85
24	82.8	0.18	-1.00	-0.82
23	79.2	0.19	-0.96	-0.77
22	75.6	0.15	-0.92	-0.77
21	72.0	0.11	-0.87	-0.76
20	68.4	0.12	-0.83	-0.71
19	64.8	0.10	-0.79	-0.69
18	61.2	0.10	-0.74	-0.64
17	57.6	0.08	-0.70	-0.62
16	54.0	0.08	-0.65	-0.57
15	50.4	0.09	-0.61	-0.52
14	46.8	0.08	-0.57	-0.49
13	43.2	0.09	-0.52	-0.43
12	39.6	0.07	-0.48	-0.41
11	36.0	0.07	-0.44	-0.37
10	32.4	0.07	-0.39	-0.32
9	28.8	0.08	-0.35	-0.27
8	25.2	0.07	-0.31	-0.24
7	21.6	0.06	-0.26	-0.20
6	18.0	0.08	-0.22	-0.14
5	14.4	0.06	-0.17	-0.11
4	10.8	0.07	-0.13	-0.06
3	7.2	0.09	-0.09	0.00
2	3.6	0.04	-0.04	0.00
1	0.0	0.00	0.00	0.00

Table 43.13: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Westbound Passing Lane.

2134+00, MSU St. 25

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	0.17	-1.37	-1.20
42	147.6	0.20	-1.34	-1.14
41	144.0	0.18	-1.31	-1.13
40	140.4	0.18	-1.28	-1.10
39	136.8	0.15	-1.24	-1.09
38	133.2	0.17	-1.21	-1.04
37	129.6	0.19	-1.18	-0.99
36	126.0	0.18	-1.15	-0.97
35	122.4	0.19	-1.11	-0.92
34	118.8	0.20	-1.08	-0.88
33	115.2	0.20	-1.05	-0.85
32	111.6	0.22	-1.01	-0.79
31	108.0	0.21	-0.98	-0.77
30	104.4	0.21	-0.95	-0.74
29	100.8	0.21	-0.92	-0.71
28	97.2	0.20	-0.88	-0.68
27	93.6	0.20	-0.85	-0.65
26	90.0	0.20	-0.82	-0.62
25	86.4	0.20	-0.79	-0.59
24	82.8	0.17	-0.75	-0.58
23	79.2	0.18	-0.72	-0.54
22	75.6	0.17	-0.69	-0.52
21	72.0	0.13	-0.65	-0.52
20	68.4	0.13	-0.62	-0.49
19	64.8	0.12	-0.59	-0.47
18	61.2	0.11	-0.56	-0.45
17	57.6	0.10	-0.52	-0.42
16	54.0	0.10	-0.49	-0.39
15	50.4	0.11	-0.46	-0.35
14	46.8	0.09	-0.43	-0.34
13	43.2	0.10	-0.39	-0.29
12	39.6	0.11	-0.36	-0.25
11	36.0	0.10	-0.33	-0.23
10	32.4	0.11	-0.29	-0.18
9	28.8	0.11	-0.26	-0.15
8	25.2	0.10	-0.23	-0.13
7	21.6	0.10	-0.20	-0.10
6	18.0	0.09	-0.16	-0.07
5	14.4	0.09	-0.13	-0.04
4	10.8	0.10	-0.10	0.00
3	7.2	0.07	-0.07	0.00
2	3.6	0.00	-0.03	-0.03
1	0.0	0.00	0.00	0.00

2130+00, MSU St. 26

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
42	147.6	-0.01	-1.90	-1.91
41	144.0	-0.04	-1.85	-1.89
40	140.4	-0.07	-1.81	-1.88
39	136.8	-0.05	-1.76	-1.81
38	133.2	-0.05	-1.72	-1.77
37	129.6	-0.03	-1.67	-1.70
36	126.0	-0.02	-1.62	-1.64
35	122.4	-0.01	-1.58	-1.59
34	118.8	0.00	-1.53	-1.53
33	115.2	0.03	-1.48	-1.45
32	111.6	0.05	-1.44	-1.39
31	108.0	0.09	-1.39	-1.30
30	104.4	0.11	-1.34	-1.23
29	100.8	0.11	-1.30	-1.19
28	97.2	0.12	-1.25	-1.13
27	93.6	0.11	-1.21	-1.10
26	90.0	0.10	-1.16	-1.06
25	86.4	0.10	-1.11	-1.01
24	82.8	0.10	-1.07	-0.97
23	79.2	0.10	-1.02	-0.92
22	75.6	0.09	-0.97	-0.88
21	72.0	0.09	-0.93	-0.84
20	68.4	0.08	-0.88	-0.80
19	64.8	0.08	-0.83	-0.75
18	61.2	0.07	-0.79	-0.72
17	57.6	0.07	-0.74	-0.67
16	54.0	0.07	-0.70	-0.63
15	50.4	0.07	-0.65	-0.58
14	46.8	0.06	-0.60	-0.54
13	43.2	0.07	-0.56	-0.49
12	39.6	0.09	-0.51	-0.42
11	36.0	0.10	-0.46	-0.36
10	32.4	0.09	-0.42	-0.33
9	28.8	0.10	-0.37	-0.27
8	25.2	0.09	-0.32	-0.23
7	21.6	0.08	-0.28	-0.20
6	18.0	0.10	-0.23	-0.13
5	14.4	0.10	-0.19	-0.09
4	10.8	0.09	-0.14	-0.05
3	7.2	0.09	-0.09	0.00
2	3.6	0.08	-0.05	0.03
1	0.0	0.00	0.00	0.00

Table 44.1: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2130+00, MSU St. 27

Point	Pavement Width (X)	Width Feet	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.0	0.00	0.00	0.00
2	3.6	0.3	0.09	-0.05	0.04
3	7.2	0.6	0.07	-0.11	-0.04
4	10.8	0.9	0.05	-0.16	-0.11
5	14.4	1.2	0.04	-0.22	-0.18
6	18.0	1.5	0.00	-0.27	-0.27
7	21.6	1.8	0.03	-0.33	-0.30
8	25.2	2.1	0.06	-0.38	-0.32
9	28.8	2.4	0.05	-0.44	-0.39
10	32.4	2.7	0.09	-0.49	-0.40
11	36.0	3.0	0.13	-0.55	-0.42
12	39.6	3.3	0.02	-0.60	-0.58
13	43.2	3.6	0.20	-0.65	-0.45
14	46.8	3.9	0.28	-0.71	-0.43
15	50.4	4.2	0.30	-0.76	-0.46
16	54.0	4.5	0.32	-0.82	-0.50
17	57.6	4.8	0.37	-0.87	-0.50
18	61.2	5.1	0.37	-0.93	-0.56
19	64.8	5.4	0.39	-0.98	-0.59
20	68.4	5.7	0.39	-1.04	-0.65
21	72.0	6.0	0.38	-1.09	-0.71
22	75.6	6.3	0.37	-1.15	-0.78
23	79.2	6.6	0.37	-1.20	-0.83
24	82.8	6.9	0.38	-1.25	-0.87
25	86.4	7.2	0.30	-1.31	-1.01
26	90.0	7.5	0.30	-1.36	-1.06
27	93.6	7.8	0.31	-1.42	-1.11
28	97.2	8.1	0.27	-1.47	-1.20
29	100.8	8.4	0.30	-1.53	-1.23
30	104.4	8.7	0.29	-1.58	-1.29
31	108.0	9.0	0.27	-1.64	-1.37
32	111.6	9.3	0.29	-1.69	-1.40
33	115.2	9.6	0.31	-1.75	-1.44
34	118.8	9.9	0.35	-1.80	-1.45
35	122.4	10.2	0.41	-1.85	-1.44
36	126.0	10.5	0.44	-1.91	-1.47
37	129.6	10.8	0.35	-1.96	-1.61
38	133.2	11.1	0.32	-2.02	-1.70
39	136.8	11.4	0.30	-2.07	-1.77
40	140.4	11.7	0.15	-2.13	-1.98
41	144.0	12.0	0.08	-2.18	-2.10
42	147.6	12.3	0.00	-2.24	-2.24

2134+00, MSU St. 28

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.04	-0.07	-0.03
3	7.2	0.03	-0.13	-0.10
4	10.8	0.09	-0.20	-0.11
5	14.4	0.07	-0.26	-0.19
6	18.0	0.06	-0.33	-0.27
7	21.6	0.10	-0.39	-0.29
8	25.2	0.13	-0.46	-0.33
9	28.8	0.15	-0.52	-0.37
10	32.4	0.23	-0.59	-0.36
11	36.0	0.31	-0.65	-0.34
12	39.6	0.36	-0.72	-0.36
13	43.2	0.45	-0.79	-0.34
14	46.8	0.52	-0.85	-0.33
15	50.4	0.54	-0.92	-0.38
16	54.0	0.59	-0.98	-0.39
17	57.6	0.63	-1.05	-0.42
18	61.2	0.64	-1.11	-0.47
19	64.8	0.65	-1.18	-0.53
20	68.4	0.67	-1.24	-0.57
21	72.0	0.69	-1.31	-0.62
22	75.6	0.68	-1.37	-0.69
23	79.2	0.68	-1.44	-0.76
24	82.8	0.67	-1.51	-0.84
25	86.4	0.64	-1.57	-0.93
26	90.0	0.66	-1.64	-0.98
27	93.6	0.68	-1.70	-1.02
28	97.2	0.67	-1.77	-1.10
29	100.8	0.71	-1.83	-1.12
30	104.4	0.73	-1.90	-1.17
31	108.0	0.74	-1.96	-1.22
32	111.6	0.83	-2.03	-1.20
33	115.2	0.90	-2.09	-1.19
34	118.8	0.91	-2.16	-1.25
35	122.4	0.94	-2.23	-1.29
36	126.0	0.93	-2.29	-1.36
37	129.6	0.88	-2.36	-1.48
38	133.2	0.93	-2.42	-1.49
39	136.8	0.86	-2.49	-1.63
40	140.4	0.75	-2.55	-1.80
41	144.0	0.69	-2.62	-1.93
42	147.6	0.39	-2.68	-2.29

Table 44.2: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2138+00, MSU St. 29

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.05	0.05
3	7.2	0.14	-0.09	0.05
4	10.8	0.19	-0.14	0.05
5	14.4	0.22	-0.19	0.03
6	18.0	0.23	-0.23	-0.00
7	21.6	0.24	-0.28	-0.04
8	25.2	0.24	-0.32	-0.08
9	28.8	0.22	-0.37	-0.15
10	32.4	0.20	-0.42	-0.22
11	36.0	0.17	-0.46	-0.29
12	39.6	0.13	-0.51	-0.38
13	43.2	0.15	-0.56	-0.41
14	46.8	0.17	-0.60	-0.43
15	50.4	0.17	-0.65	-0.48
16	54.0	0.20	-0.70	-0.50
17	57.6	0.24	-0.74	-0.50
18	61.2	0.27	-0.79	-0.52
19	64.8	0.30	-0.83	-0.53
20	68.4	0.31	-0.88	-0.57
21	72.0	0.31	-0.93	-0.62
22	75.6	0.30	-0.97	-0.67
23	79.2	0.29	-1.02	-0.73
24	82.8	0.29	-1.07	-0.78
25	86.4	0.23	-1.11	-0.88
26	90.0	0.23	-1.16	-0.93
27	93.6	0.22	-1.21	-0.99
28	97.2	0.15	-1.25	-1.10
29	100.8	0.14	-1.30	-1.16
30	104.4	0.09	-1.34	-1.25
31	108.0	0.01	-1.39	-1.38
32	111.6	-0.02	-1.44	-1.46
33	115.2	-0.04	-1.48	-1.52
34	118.8	-0.09	-1.53	-1.62
35	122.4	-0.09	-1.58	-1.67
36	126.0	-0.07	-1.62	-1.69
37	129.6	-0.08	-1.67	-1.75
38	133.2	-0.05	-1.72	-1.77
39	136.8	-0.03	-1.76	-1.79
40	140.4	-0.10	-1.81	-1.91
41	144.0	-0.11	-1.85	-1.96
42	147.6	-0.10	-1.90	-2.00
43	151.2	-0.20	-1.95	-2.15

2144+00, MSU St. 30

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.01	-0.05	-0.04
3	7.2	0.01	-0.10	-0.09
4	10.8	0.06	-0.16	-0.10
5	14.4	0.07	-0.21	-0.14
6	18.0	0.05	-0.26	-0.21
7	21.6	0.06	-0.31	-0.25
8	25.2	0.03	-0.36	-0.33
9	28.8	0.00	-0.41	-0.41
10	32.4	-0.04	-0.47	-0.51
11	36.0	-0.01	-0.52	-0.53
12	39.6	-0.02	-0.57	-0.59
13	43.2	0.01	-0.62	-0.61
14	46.8	0.04	-0.67	-0.63
15	50.4	0.07	-0.73	-0.66
16	54.0	0.16	-0.78	-0.62
17	57.6	0.21	-0.83	-0.62
18	61.2	0.24	-0.88	-0.64
19	64.8	0.25	-0.93	-0.68
20	68.4	0.28	-0.98	-0.70
21	72.0	0.30	-1.04	-0.74
22	75.6	0.30	-1.09	-0.79
23	79.2	0.30	-1.14	-0.84
24	82.8	0.31	-1.19	-0.88
25	86.4	0.29	-1.24	-0.95
26	90.0	0.30	-1.30	-1.00
27	93.6	0.21	-1.35	-1.14
28	97.2	0.18	-1.40	-1.22
29	100.8	0.16	-1.45	-1.29
30	104.4	0.11	-1.50	-1.39
31	108.0	0.07	-1.55	-1.48
32	111.6	0.08	-1.61	-1.53
33	115.2	0.06	-1.66	-1.60
34	118.8	0.07	-1.71	-1.64
35	122.4	0.12	-1.76	-1.64
36	126.0	0.18	-1.81	-1.63
37	129.6	0.14	-1.87	-1.73
38	133.2	0.13	-1.92	-1.79
39	136.8	0.13	-1.97	-1.84
40	140.4	0.09	-2.02	-1.93
41	144.0	0.10	-2.07	-1.97
42	147.6	-0.03	-2.12	-2.15
43	151.2	-0.16	-2.18	-2.34

Table 44.3: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2150+00, MSU St. 31

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.03	-0.05	-0.02
3	7.2	0.03	-0.09	-0.06
4	10.8	0.06	-0.14	-0.08
5	14.4	0.08	-0.19	-0.11
6	18.0	0.06	-0.23	-0.17
7	21.6	0.06	-0.28	-0.22
8	25.2	0.07	-0.32	-0.25
9	28.8	0.05	-0.37	-0.32
10	32.4	0.04	-0.42	-0.38
11	36.0	0.03	-0.46	-0.43
12	39.6	0.04	-0.51	-0.47
13	43.2	0.07	-0.56	-0.49
14	46.8	0.07	-0.60	-0.53
15	50.4	0.12	-0.65	-0.53
16	54.0	0.19	-0.70	-0.51
17	57.6	0.25	-0.74	-0.49
18	61.2	0.29	-0.79	-0.50
19	64.8	0.28	-0.83	-0.55
20	68.4	0.33	-0.88	-0.55
21	72.0	0.35	-0.93	-0.58
22	75.6	0.34	-0.97	-0.63
23	79.2	0.37	-1.02	-0.65
24	82.8	0.40	-1.07	-0.67
25	86.4	0.40	-1.11	-0.71
26	90.0	0.31	-1.16	-0.85
27	93.6	0.27	-1.21	-0.94
28	97.2	0.18	-1.25	-1.07
29	100.8	0.12	-1.30	-1.18
30	104.4	0.11	-1.34	-1.23
31	108.0	0.10	-1.39	-1.29
32	111.6	0.12	-1.44	-1.32
33	115.2	0.16	-1.48	-1.32
34	118.8	0.17	-1.53	-1.36
35	122.4	0.22	-1.58	-1.36
36	126.0	0.30	-1.62	-1.32
37	129.6	0.32	-1.67	-1.35
38	133.2	0.30	-1.72	-1.42
39	136.8	0.27	-1.76	-1.49
40	140.4	0.27	-1.81	-1.54
41	144.0	0.17	-1.85	-1.68
42	147.6	0.07	-1.90	-1.83
43	151.2	-0.06	-1.95	-2.01

2154+00, MSU St. 32

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.08	-0.05	0.03
3	7.2	0.09	-0.10	-0.01
4	10.8	0.12	-0.15	-0.03
5	14.4	0.17	-0.20	-0.03
6	18.0	0.13	-0.25	-0.12
7	21.6	0.11	-0.29	-0.18
8	25.2	0.12	-0.34	-0.22
9	28.8	0.09	-0.39	-0.30
10	32.4	0.08	-0.44	-0.36
11	36.0	0.09	-0.49	-0.40
12	39.6	0.11	-0.54	-0.43
13	43.2	0.12	-0.59	-0.47
14	46.8	0.19	-0.64	-0.45
15	50.4	0.27	-0.69	-0.42
16	54.0	0.30	-0.74	-0.44
17	57.6	0.34	-0.79	-0.45
18	61.2	0.36	-0.83	-0.47
19	64.8	0.35	-0.88	-0.53
20	68.4	0.38	-0.93	-0.55
21	72.0	0.39	-0.98	-0.59
22	75.6	0.37	-1.03	-0.66
23	79.2	0.39	-1.08	-0.69
24	82.8	0.38	-1.13	-0.75
25	86.4	0.35	-1.18	-0.83
26	90.0	0.32	-1.23	-0.91
27	93.6	0.29	-1.28	-0.99
28	97.2	0.21	-1.33	-1.12
29	100.8	0.21	-1.37	-1.16
30	104.4	0.20	-1.42	-1.22
31	108.0	0.19	-1.47	-1.28
32	111.6	0.20	-1.52	-1.32
33	115.2	0.21	-1.57	-1.36
34	118.8	0.23	-1.62	-1.39
35	122.4	0.25	-1.67	-1.42
36	126.0	0.25	-1.72	-1.47
37	129.6	0.22	-1.77	-1.55
38	133.2	0.24	-1.82	-1.58
39	136.8	0.27	-1.87	-1.60
40	140.4	0.29	-1.91	-1.62
41	144.0	0.29	-1.96	-1.67
42	147.6	0.23	-2.01	-1.78
43	151.2	0.09	-2.06	-1.97

Table 44.4: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2160+00, MSU St. 33

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.06	-0.06	0.00
3	7.2	0.08	-0.11	-0.03
4	10.8	0.15	-0.17	-0.02
5	14.4	0.17	-0.23	-0.06
6	18.0	0.16	-0.29	-0.13
7	21.6	0.15	-0.34	-0.19
8	25.2	0.16	-0.40	-0.24
9	28.8	0.17	-0.46	-0.29
10	32.4	0.16	-0.52	-0.36
11	36.0	0.20	-0.57	-0.37
12	39.6	0.20	-0.63	-0.43
13	43.2	0.21	-0.69	-0.48
14	46.8	0.28	-0.74	-0.46
15	50.4	0.29	-0.80	-0.51
16	54.0	0.32	-0.86	-0.54
17	57.6	0.36	-0.92	-0.56
18	61.2	0.39	-0.97	-0.58
19	64.8	0.38	-1.03	-0.65
20	68.4	0.41	-1.09	-0.68
21	72.0	0.46	-1.15	-0.69
22	75.6	0.45	-1.20	-0.75
23	79.2	0.48	-1.26	-0.78
24	82.8	0.49	-1.32	-0.83
25	86.4	0.40	-1.37	-0.97
26	90.0	0.40	-1.43	-1.03
27	93.6	0.34	-1.49	-1.15
28	97.2	0.29	-1.55	-1.26
29	100.8	0.30	-1.60	-1.30
30	104.4	0.29	-1.66	-1.37
31	108.0	0.29	-1.72	-1.43
32	111.6	0.28	-1.78	-1.50
33	115.2	0.28	-1.83	-1.55
34	118.8	0.27	-1.89	-1.62
35	122.4	0.29	-1.95	-1.66
36	126.0	0.31	-2.00	-1.69
37	129.6	0.28	-2.06	-1.78
38	133.2	0.29	-2.12	-1.83
39	136.8	0.28	-2.18	-1.90
40	140.4	0.22	-2.23	-2.01
41	144.0	0.22	-2.29	-2.07
42	147.6	0.09	-2.35	-2.26
43	151.2	-0.02	-2.41	-2.43

2164+00, MSU St. 34

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.06	-0.05	0.01
3	7.2	0.06	-0.10	-0.04
4	10.8	0.08	-0.16	-0.08
5	14.4	0.09	-0.21	-0.12
6	18.0	0.07	-0.26	-0.19
7	21.6	0.09	-0.31	-0.22
8	25.2	0.10	-0.36	-0.26
9	28.8	0.10	-0.41	-0.31
10	32.4	0.13	-0.47	-0.34
11	36.0	0.16	-0.52	-0.36
12	39.6	0.16	-0.57	-0.41
13	43.2	0.21	-0.62	-0.41
14	46.8	0.26	-0.67	-0.41
15	50.4	0.28	-0.73	-0.45
16	54.0	0.33	-0.78	-0.45
17	57.6	0.38	-0.83	-0.45
18	61.2	0.40	-0.88	-0.48
19	64.8	0.45	-0.93	-0.48
20	68.4	0.50	-0.98	-0.48
21	72.0	0.51	-1.04	-0.53
22	75.6	0.54	-1.09	-0.55
23	79.2	0.55	-1.14	-0.59
24	82.8	0.51	-1.19	-0.68
25	86.4	0.50	-1.24	-0.74
26	90.0	0.45	-1.30	-0.85
27	93.6	0.41	-1.35	-0.94
28	97.2	0.40	-1.40	-1.00
29	100.8	0.40	-1.45	-1.05
30	104.4	0.38	-1.50	-1.12
31	108.0	0.34	-1.55	-1.21
32	111.6	0.37	-1.61	-1.24
33	115.2	0.39	-1.66	-1.27
34	118.8	0.38	-1.71	-1.33
35	122.4	0.41	-1.76	-1.35
36	126.0	0.45	-1.81	-1.36
37	129.6	0.43	-1.87	-1.44
38	133.2	0.43	-1.92	-1.49
39	136.8	0.40	-1.97	-1.57
40	140.4	0.35	-2.02	-1.67
41	144.0	0.24	-2.07	-1.83
42	147.6	0.13	-2.12	-1.99
43	151.2	0.01	-2.18	-2.17

Table 44.5: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2170+00, MSU St. 35

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.04	-0.04	-0.00
3	7.2	0.10	-0.08	0.02
4	10.8	0.16	-0.12	0.04
5	14.4	0.18	-0.16	0.02
6	18.0	0.19	-0.20	-0.01
7	21.6	0.23	-0.25	-0.02
8	25.2	0.21	-0.29	-0.08
9	28.8	0.26	-0.33	-0.07
10	32.4	0.28	-0.37	-0.09
11	36.0	0.27	-0.41	-0.14
12	39.6	0.30	-0.45	-0.15
13	43.2	0.32	-0.49	-0.17
14	46.8	0.33	-0.53	-0.20
15	50.4	0.36	-0.57	-0.21
16	54.0	0.39	-0.61	-0.22
17	57.6	0.41	-0.65	-0.24
18	61.2	0.46	-0.70	-0.24
19	64.8	0.52	-0.74	-0.22
20	68.4	0.57	-0.78	-0.21
21	72.0	0.58	-0.82	-0.24
22	75.6	0.63	-0.86	-0.23
23	79.2	0.66	-0.90	-0.24
24	82.8	0.67	-0.94	-0.27
25	86.4	0.65	-0.98	-0.33
26	90.0	0.65	-1.02	-0.37
27	93.6	0.59	-1.06	-0.47
28	97.2	0.57	-1.10	-0.53
29	100.8	0.58	-1.15	-0.57
30	104.4	0.52	-1.19	-0.67
31	108.0	0.51	-1.23	-0.72
32	111.6	0.50	-1.27	-0.77
33	115.2	0.46	-1.31	-0.85
34	118.8	0.46	-1.35	-0.89
35	122.4	0.45	-1.39	-0.94
36	126.0	0.46	-1.43	-0.97
37	129.6	0.48	-1.47	-0.99
38	133.2	0.49	-1.51	-1.02
39	136.8	0.48	-1.55	-1.07
40	140.4	0.46	-1.60	-1.14
41	144.0	0.45	-1.64	-1.19
42	147.6	0.27	-1.68	-1.41
43	151.2	0.21	-1.72	-1.51

2176+00, MSU St. 36

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.00	-0.04	-0.04
3	7.2	0.05	-0.08	-0.03
4	10.8	0.09	-0.11	-0.02
5	14.4	0.11	-0.15	-0.04
6	18.0	0.13	-0.19	-0.06
7	21.6	0.11	-0.23	-0.12
8	25.2	0.10	-0.27	-0.17
9	28.8	0.07	-0.31	-0.24
10	32.4	0.08	-0.34	-0.26
11	36.0	0.10	-0.38	-0.28
12	39.6	0.13	-0.42	-0.29
13	43.2	0.19	-0.46	-0.27
14	46.8	0.26	-0.50	-0.24
15	50.4	0.33	-0.53	-0.20
16	54.0	0.44	-0.57	-0.13
17	57.6	0.54	-0.61	-0.07
18	61.2	0.57	-0.65	-0.08
19	64.8	0.60	-0.69	-0.09
20	68.4	0.61	-0.73	-0.12
21	72.0	0.61	-0.76	-0.15
22	75.6	0.64	-0.80	-0.16
23	79.2	0.67	-0.84	-0.17
24	82.8	0.65	-0.88	-0.23
25	86.4	0.65	-0.92	-0.27
26	90.0	0.64	-0.95	-0.31
27	93.6	0.57	-0.99	-0.42
28	97.2	0.52	-1.03	-0.51
29	100.8	0.50	-1.07	-0.57
30	104.4	0.44	-1.11	-0.67
31	108.0	0.45	-1.15	-0.70
32	111.6	0.47	-1.18	-0.71
33	115.2	0.47	-1.22	-0.75
34	118.8	0.52	-1.26	-0.74
35	122.4	0.57	-1.30	-0.73
36	126.0	0.62	-1.34	-0.72
37	129.6	0.70	-1.37	-0.67
38	133.2	0.80	-1.41	-0.61
39	136.8	0.80	-1.45	-0.65
40	140.4	0.78	-1.49	-0.71
41	144.0	0.70	-1.53	-0.83
42	147.6	0.57	-1.57	-1.00
43	151.2	0.37	-1.60	-1.23

Table 44.6: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2180+00, MSU St. 37

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.08	-0.06	0.02
3	7.2	0.13	-0.12	0.01
4	10.8	0.19	-0.18	0.01
5	14.4	0.20	-0.24	-0.04
6	18.0	0.14	-0.30	-0.16
7	21.6	0.00	-0.36	-0.36
8	25.2	-0.07	-0.42	-0.49
9	28.8	-0.09	-0.48	-0.57
10	32.4	-0.05	-0.54	-0.59
11	36.0	0.00	-0.60	-0.60
12	39.6	0.03	-0.66	-0.63
13	43.2	0.12	-0.72	-0.60
14	46.8	0.26	-0.78	-0.52
15	50.4	0.38	-0.84	-0.46
16	54.0	0.54	-0.90	-0.36
17	57.6	0.68	-0.96	-0.28
18	61.2	0.70	-1.02	-0.32
19	64.8	0.70	-1.08	-0.38
20	68.4	0.70	-1.14	-0.44
21	72.0	0.69	-1.20	-0.51
22	75.6	0.67	-1.26	-0.59
23	79.2	0.68	-1.32	-0.64
24	82.8	0.67	-1.38	-0.71
25	86.4	0.63	-1.44	-0.81
26	90.0	0.60	-1.50	-0.90
27	93.6	0.50	-1.56	-1.06
28	97.2	0.37	-1.62	-1.25
29	100.8	0.31	-1.68	-1.37
30	104.4	0.27	-1.74	-1.47
31	108.0	0.30	-1.80	-1.50
32	111.6	0.34	-1.86	-1.52
33	115.2	0.38	-1.92	-1.54
34	118.8	0.49	-1.98	-1.49
35	122.4	0.60	-2.04	-1.44
36	126.0	0.76	-2.10	-1.34
37	129.6	0.80	-2.16	-1.36
38	133.2	0.69	-2.22	-1.53
39	136.8	0.60	-2.28	-1.68
40	140.4	0.43	-2.34	-1.91
41	144.0	0.30	-2.40	-2.10
42	147.6	0.11	-2.46	-2.35
43	151.2	-0.05	-2.52	-2.57

2184+00, MSU St. 38

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.05	0.05
3	7.2	0.16	-0.10	0.06
4	10.8	0.21	-0.15	0.06
5	14.4	0.23	-0.20	0.03
6	18.0	0.20	-0.25	-0.05
7	21.6	0.07	-0.29	-0.22
8	25.2	-0.06	-0.34	-0.40
9	28.8	-0.13	-0.39	-0.52
10	32.4	-0.08	-0.44	-0.52
11	36.0	-0.01	-0.49	-0.50
12	39.6	-0.07	-0.54	-0.61
13	43.2	0.02	-0.59	-0.57
14	46.8	0.13	-0.64	-0.51
15	50.4	0.25	-0.69	-0.44
16	54.0	0.40	-0.74	-0.34
17	57.6	0.56	-0.79	-0.23
18	61.2	0.60	-0.83	-0.23
19	64.8	0.61	-0.88	-0.27
20	68.4	0.63	-0.93	-0.30
21	72.0	0.59	-0.98	-0.39
22	75.6	0.59	-1.03	-0.44
23	79.2	0.57	-1.08	-0.51
24	82.8	0.57	-1.13	-0.56
25	86.4	0.59	-1.18	-0.59
26	90.0	0.54	-1.23	-0.69
27	93.6	0.43	-1.28	-0.85
28	97.2	0.26	-1.33	-1.07
29	100.8	0.14	-1.37	-1.23
30	104.4	0.10	-1.42	-1.32
31	108.0	0.10	-1.47	-1.37
32	111.6	0.13	-1.52	-1.39
33	115.2	0.15	-1.57	-1.42
34	118.8	0.20	-1.62	-1.42
35	122.4	0.34	-1.67	-1.33
36	126.0	0.52	-1.72	-1.20
37	129.6	0.65	-1.77	-1.12
38	133.2	0.70	-1.82	-1.12
39	136.8	0.60	-1.87	-1.27
40	140.4	0.40	-1.91	-1.51
41	144.0	0.29	-1.96	-1.67
42	147.6	0.12	-2.01	-1.89
43	151.2	-0.03	-2.06	-2.09

Table 44.7: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2188+00, MSU St. 39

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.04	-0.03	0.01
3	7.2	0.13	-0.07	0.06
4	10.8	0.28	-0.10	0.18
5	14.4	0.35	-0.13	0.22
6	18.0	0.30	-0.16	0.14
7	21.6	0.11	-0.20	-0.09
8	25.2	0.00	-0.23	-0.23
9	28.8	-0.01	-0.26	-0.27
10	32.4	0.01	-0.29	-0.28
11	36.0	-0.02	-0.33	-0.35
12	39.6	-0.07	-0.36	-0.43
13	43.2	0.07	-0.39	-0.32
14	46.8	0.16	-0.43	-0.27
15	50.4	0.19	-0.46	-0.27
16	54.0	0.30	-0.49	-0.19
17	57.6	0.50	-0.52	-0.02
18	61.2	0.55	-0.56	-0.01
19	64.8	0.57	-0.59	-0.02
20	68.4	0.58	-0.62	-0.04
21	72.0	0.54	-0.65	-0.11
22	75.6	0.54	-0.69	-0.15
23	79.2	0.51	-0.72	-0.21
24	82.8	0.46	-0.75	-0.29
25	86.4	0.45	-0.79	-0.34
26	90.0	0.40	-0.82	-0.42
27	93.6	0.20	-0.85	-0.65
28	97.2	0.01	-0.88	-0.87
29	100.8	-0.11	-0.92	-1.03
30	104.4	-0.16	-0.95	-1.11
31	108.0	-0.19	-0.98	-1.17
32	111.6	-0.21	-1.01	-1.22
33	115.2	-0.20	-1.05	-1.25
34	118.8	-0.11	-1.08	-1.19
35	122.4	-0.05	-1.11	-1.16
36	126.0	0.05	-1.15	-1.10
37	129.6	0.18	-1.18	-1.00
38	133.2	0.30	-1.21	-0.91
39	136.8	0.36	-1.24	-0.88
40	140.4	0.31	-1.28	-0.97
41	144.0	0.20	-1.31	-1.11
42	147.6	0.05	-1.34	-1.29
43	151.2	-0.06	-1.37	-1.43

2192+00, MSU St. 40

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.09	-0.05	0.04
3	7.2	0.09	-0.10	-0.01
4	10.8	0.01	-0.16	-0.15
5	14.4	-0.10	-0.21	-0.31
6	18.0	-0.19	-0.26	-0.45
7	21.6	-0.19	-0.31	-0.50
8	25.2	-0.15	-0.36	-0.51
9	28.8	-0.12	-0.41	-0.53
10	32.4	-0.09	-0.47	-0.56
11	36.0	-0.01	-0.52	-0.53
12	39.6	0.09	-0.57	-0.48
13	43.2	0.30	-0.62	-0.32
14	46.8	0.51	-0.67	-0.16
15	50.4	0.57	-0.73	-0.16
16	54.0	0.59	-0.78	-0.19
17	57.6	0.59	-0.83	-0.24
18	61.2	0.58	-0.88	-0.30
19	64.8	0.54	-0.93	-0.39
20	68.4	0.51	-0.98	-0.47
21	72.0	0.50	-1.04	-0.54
22	75.6	0.51	-1.09	-0.58
23	79.2	0.48	-1.14	-0.66
24	82.8	0.40	-1.19	-0.79
25	86.4	0.26	-1.24	-0.98
26	90.0	0.15	-1.30	-1.15
27	93.6	0.10	-1.35	-1.25
28	97.2	0.09	-1.40	-1.31
29	100.8	0.11	-1.45	-1.34
30	104.4	0.17	-1.50	-1.33
31	108.0	0.19	-1.55	-1.36
32	111.6	0.28	-1.61	-1.33
33	115.2	0.41	-1.66	-1.25
34	118.8	0.61	-1.71	-1.10
35	122.4	0.73	-1.76	-1.03
36	126.0	0.72	-1.81	-1.09
37	129.6	0.59	-1.87	-1.28
38	133.2	0.42	-1.92	-1.50
39	136.8	0.40	-1.97	-1.57
40	140.4	0.25	-2.02	-1.77
41	144.0	0.20	-2.07	-1.87
42	147.6	0.12	-2.12	-2.00
43	151.2	0.00	-2.18	-2.18
44	154.8	-0.12	-2.23	-2.35

Table 44.8: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2196+00, MSU St. 41

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.04	0.06
3	7.2	0.20	-0.09	0.11
4	10.8	0.29	-0.13	0.16
5	14.4	0.34	-0.17	0.17
6	18.0	0.35	-0.22	0.13
7	21.6	0.34	-0.26	0.08
8	25.2	0.27	-0.31	-0.04
9	28.8	0.03	-0.35	-0.32
10	32.4	-0.13	-0.39	-0.52
11	36.0	-0.17	-0.44	-0.61
12	39.6	-0.13	-0.48	-0.61
13	43.2	-0.14	-0.52	-0.66
14	46.8	-0.13	-0.57	-0.70
15	50.4	-0.06	-0.61	-0.67
16	54.0	0.08	-0.65	-0.57
17	57.6	0.20	-0.70	-0.50
18	61.2	0.38	-0.74	-0.36
19	64.8	0.56	-0.79	-0.23
20	68.4	0.63	-0.83	-0.20
21	72.0	0.61	-0.87	-0.26
22	75.6	0.58	-0.92	-0.34
23	79.2	0.52	-0.96	-0.44
24	82.8	0.48	-1.00	-0.52
25	86.4	0.47	-1.05	-0.58
26	90.0	0.43	-1.09	-0.66
27	93.6	0.39	-1.13	-0.74
28	97.2	0.35	-1.18	-0.83
29	100.8	0.20	-1.22	-1.02
30	104.4	0.00	-1.27	-1.27
31	108.0	-0.11	-1.31	-1.42
32	111.6	-0.13	-1.35	-1.48
33	115.2	-0.18	-1.40	-1.58
34	118.8	-0.19	-1.44	-1.63
35	122.4	-0.13	-1.48	-1.61
36	126.0	-0.05	-1.53	-1.58
37	129.6	0.07	-1.57	-1.50
38	133.2	0.25	-1.61	-1.36
39	136.8	0.47	-1.66	-1.19
40	140.4	0.49	-1.70	-1.21
41	144.0	0.36	-1.75	-1.39
42	147.6	0.20	-1.79	-1.59

2200+00, MSU St. 42

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.04	0.06
3	7.2	0.19	-0.09	0.10
4	10.8	0.27	-0.13	0.14
5	14.4	0.29	-0.17	0.12
6	18.0	0.14	-0.22	-0.08
7	21.6	-0.09	-0.26	-0.35
8	25.2	-0.20	-0.31	-0.51
9	28.8	-0.19	-0.35	-0.54
10	32.4	-0.12	-0.39	-0.51
11	36.0	-0.15	-0.44	-0.59
12	39.6	-0.14	-0.48	-0.62
13	43.2	0.00	-0.52	-0.52
14	46.8	0.18	-0.57	-0.39
15	50.4	0.31	-0.61	-0.30
16	54.0	0.55	-0.65	-0.10
17	57.6	0.66	-0.70	-0.04
18	61.2	0.61	-0.74	-0.13
19	64.8	0.59	-0.79	-0.20
20	68.4	0.54	-0.83	-0.29
21	72.0	0.55	-0.87	-0.32
22	75.6	0.56	-0.92	-0.36
23	79.2	0.55	-0.96	-0.41
24	82.8	0.55	-1.00	-0.45
25	86.4	0.58	-1.05	-0.47
26	90.0	0.49	-1.09	-0.60
27	93.6	0.26	-1.13	-0.87
28	97.2	0.04	-1.18	-1.14
29	100.8	-0.03	-1.22	-1.25
30	104.4	-0.01	-1.27	-1.28
31	108.0	0.00	-1.31	-1.31
32	111.6	0.03	-1.35	-1.32
33	115.2	0.08	-1.40	-1.32
34	118.8	0.20	-1.44	-1.24
35	122.4	0.40	-1.48	-1.08
36	126.0	0.63	-1.53	-0.90
37	129.6	0.66	-1.57	-0.91
38	133.2	0.51	-1.61	-1.10
39	136.8	0.41	-1.66	-1.25
40	140.4	0.36	-1.70	-1.34
41	144.0	0.42	-1.75	-1.33
42	147.6	0.13	-1.79	-1.66
43	151.2	-0.02	-1.83	-1.85

Table 44.9: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2208+00, MSU St. 43

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.06	-0.05	0.01
3	7.2	0.09	-0.11	-0.02
4	10.8	0.10	-0.16	-0.06
5	14.4	0.11	-0.22	-0.11
6	18.0	0.10	-0.27	-0.17
7	21.6	0.10	-0.33	-0.23
8	25.2	0.13	-0.38	-0.25
9	28.8	0.14	-0.44	-0.30
10	32.4	0.19	-0.49	-0.30
11	36.0	0.24	-0.55	-0.31
12	39.6	0.27	-0.60	-0.33
13	43.2	0.32	-0.65	-0.33
14	46.8	0.37	-0.71	-0.34
15	50.4	0.38	-0.76	-0.38
16	54.0	0.45	-0.82	-0.37
17	57.6	0.46	-0.87	-0.41
18	61.2	0.49	-0.93	-0.44
19	64.8	0.51	-0.98	-0.47
20	68.4	0.53	-1.04	-0.51
21	72.0	0.54	-1.09	-0.55
22	75.6	0.56	-1.15	-0.59
23	79.2	0.58	-1.20	-0.62
24	82.8	0.51	-1.25	-0.74
25	86.4	0.50	-1.31	-0.81
26	90.0	0.50	-1.36	-0.86
27	93.6	0.45	-1.42	-0.97
28	97.2	0.44	-1.47	-1.03
29	100.8	0.44	-1.53	-1.09
30	104.4	0.44	-1.58	-1.14
31	108.0	0.45	-1.64	-1.19
32	111.6	0.47	-1.69	-1.22
33	115.2	0.47	-1.75	-1.28
34	118.8	0.48	-1.80	-1.32
35	122.4	0.49	-1.85	-1.36
36	126.0	0.47	-1.91	-1.44
37	129.6	0.44	-1.96	-1.52
38	133.2	0.43	-2.02	-1.59
39	136.8	0.41	-2.07	-1.66
40	140.4	0.32	-2.13	-1.81
41	144.0	0.16	-2.18	-2.02
42	147.6	0.01	-2.24	-2.23
43	151.2	-0.12	-2.29	-2.41

2214+00, MSU St. 44

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.07	-0.05	0.02
3	7.2	0.10	-0.10	-0.00
4	10.8	0.10	-0.16	-0.06
5	14.4	0.11	-0.21	-0.10
6	18.0	0.14	-0.26	-0.12
7	21.6	0.11	-0.31	-0.20
8	25.2	0.11	-0.36	-0.25
9	28.8	0.08	-0.41	-0.33
10	32.4	0.06	-0.47	-0.41
11	36.0	0.07	-0.52	-0.45
12	39.6	0.07	-0.57	-0.50
13	43.2	0.09	-0.62	-0.53
14	46.8	0.12	-0.67	-0.55
15	50.4	0.19	-0.73	-0.54
16	54.0	0.24	-0.78	-0.54
17	57.6	0.30	-0.83	-0.53
18	61.2	0.31	-0.88	-0.57
19	64.8	0.35	-0.93	-0.58
20	68.4	0.42	-0.98	-0.56
21	72.0	0.40	-1.04	-0.64
22	75.6	0.40	-1.09	-0.69
23	79.2	0.40	-1.14	-0.74
24	82.8	0.36	-1.19	-0.83
25	86.4	0.37	-1.24	-0.87
26	90.0	0.36	-1.30	-0.94
27	93.6	0.28	-1.35	-1.07
28	97.2	0.25	-1.40	-1.15
29	100.8	0.21	-1.45	-1.24
30	104.4	0.18	-1.50	-1.32
31	108.0	0.14	-1.55	-1.41
32	111.6	0.17	-1.61	-1.44
33	115.2	0.16	-1.66	-1.50
34	118.8	0.19	-1.71	-1.52
35	122.4	0.22	-1.76	-1.54
36	126.0	0.21	-1.81	-1.60
37	129.6	0.22	-1.87	-1.65
38	133.2	0.19	-1.92	-1.73
39	136.8	0.17	-1.97	-1.80
40	140.4	0.12	-2.02	-1.90
41	144.0	0.08	-2.07	-1.99
42	147.6	-0.08	-2.12	-2.20
43	151.2	-0.20	-2.18	-2.38

Table 44.10: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2220+00, MSU St. 45

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.02	0.08
3	7.2	0.13	-0.04	0.09
4	10.8	0.16	-0.06	0.10
5	14.4	0.19	-0.08	0.11
6	18.0	0.20	-0.10	0.10
7	21.6	0.19	-0.11	0.08
8	25.2	0.16	-0.13	0.03
9	28.8	0.14	-0.15	-0.01
10	32.4	0.17	-0.17	-0.00
11	36.0	0.21	-0.19	0.02
12	39.6	0.24	-0.21	0.03
13	43.2	0.30	-0.23	0.07
14	46.8	0.38	-0.25	0.13
15	50.4	0.43	-0.27	0.16
16	54.0	0.50	-0.29	0.21
17	57.6	0.54	-0.31	0.23
18	61.2	0.56	-0.32	0.24
19	64.8	0.59	-0.34	0.25
20	68.4	0.63	-0.36	0.27
21	72.0	0.65	-0.38	0.27
22	75.6	0.70	-0.40	0.30
23	79.2	0.70	-0.42	0.28
24	82.8	0.70	-0.44	0.26
25	86.4	0.67	-0.46	0.21
26	90.0	0.64	-0.48	0.16
27	93.6	0.59	-0.50	0.09
28	97.2	0.54	-0.52	0.02
29	100.8	0.53	-0.53	-0.00
30	104.4	0.51	-0.55	-0.04
31	108.0	0.52	-0.57	-0.05
32	111.6	0.55	-0.59	-0.04
33	115.2	0.56	-0.61	-0.05
34	118.8	0.59	-0.63	-0.04
35	122.4	0.63	-0.65	-0.02
36	126.0	0.63	-0.67	-0.04
37	129.6	0.63	-0.69	-0.06
38	133.2	0.62	-0.71	-0.09
39	136.8	0.62	-0.73	-0.11
40	140.4	0.66	-0.74	-0.08
41	144.0	0.56	-0.76	-0.20
42	147.6	0.47	-0.78	-0.31
43	151.2	0.33	-0.80	-0.47

2226+00, MSU St. 46

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.10	-0.05	0.05
3	7.2	0.16	-0.09	0.07
4	10.8	0.19	-0.14	0.05
5	14.4	0.20	-0.19	0.01
6	18.0	0.20	-0.23	-0.03
7	21.6	0.19	-0.28	-0.09
8	25.2	0.19	-0.32	-0.13
9	28.8	0.18	-0.37	-0.19
10	32.4	0.20	-0.42	-0.22
11	36.0	0.22	-0.46	-0.24
12	39.6	0.27	-0.51	-0.24
13	43.2	0.30	-0.56	-0.26
14	46.8	0.40	-0.60	-0.20
15	50.4	0.48	-0.65	-0.17
16	54.0	0.52	-0.70	-0.18
17	57.6	0.56	-0.74	-0.18
18	61.2	0.55	-0.79	-0.24
19	64.8	0.57	-0.83	-0.26
20	68.4	0.60	-0.88	-0.28
21	72.0	0.60	-0.93	-0.33
22	75.6	0.62	-0.97	-0.35
23	79.2	0.60	-1.02	-0.42
24	82.8	0.57	-1.07	-0.50
25	86.4	0.57	-1.11	-0.54
26	90.0	0.52	-1.16	-0.64
27	93.6	0.50	-1.21	-0.71
28	97.2	0.47	-1.25	-0.78
29	100.8	0.45	-1.30	-0.85
30	104.4	0.44	-1.34	-0.90
31	108.0	0.45	-1.39	-0.94
32	111.6	0.48	-1.44	-0.96
33	115.2	0.50	-1.48	-0.98
34	118.8	0.55	-1.53	-0.98
35	122.4	0.58	-1.58	-1.00
36	126.0	0.60	-1.62	-1.02
37	129.6	0.57	-1.67	-1.10
38	133.2	0.58	-1.72	-1.14
39	136.8	0.61	-1.76	-1.15
40	140.4	0.57	-1.81	-1.24
41	144.0	0.39	-1.85	-1.46
42	147.6	0.30	-1.90	-1.60
43	151.2	0.19	-1.95	-1.76

Table 44.11: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2232+00, MSU St. 47

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.09	-0.05	0.04
3	7.2	0.10	-0.09	0.01
4	10.8	0.12	-0.14	-0.02
5	14.4	0.15	-0.19	-0.04
6	18.0	0.14	-0.23	-0.09
7	21.6	0.14	-0.28	-0.14
8	25.2	0.12	-0.32	-0.20
9	28.8	0.08	-0.37	-0.29
10	32.4	0.10	-0.42	-0.32
11	36.0	0.11	-0.46	-0.35
12	39.6	0.13	-0.51	-0.38
13	43.2	0.17	-0.56	-0.39
14	46.8	0.21	-0.60	-0.39
15	50.4	0.27	-0.65	-0.38
16	54.0	0.30	-0.70	-0.40
17	57.6	0.37	-0.74	-0.37
18	61.2	0.39	-0.79	-0.40
19	64.8	0.42	-0.83	-0.41
20	68.4	0.47	-0.88	-0.41
21	72.0	0.47	-0.93	-0.46
22	75.6	0.49	-0.97	-0.48
23	79.2	0.50	-1.02	-0.52
24	82.8	0.50	-1.07	-0.57
25	86.4	0.49	-1.11	-0.62
26	90.0	0.45	-1.16	-0.71
27	93.6	0.39	-1.21	-0.82
28	97.2	0.37	-1.25	-0.88
29	100.8	0.33	-1.30	-0.97
30	104.4	0.30	-1.34	-1.04
31	108.0	0.30	-1.39	-1.09
32	111.6	0.30	-1.44	-1.14
33	115.2	0.30	-1.48	-1.18
34	118.8	0.32	-1.53	-1.21
35	122.4	0.37	-1.58	-1.21
36	126.0	0.40	-1.62	-1.22
37	129.6	0.38	-1.67	-1.29
38	133.2	0.38	-1.72	-1.34
39	136.8	0.39	-1.76	-1.37
40	140.4	0.27	-1.81	-1.54
41	144.0	0.20	-1.85	-1.65
42	147.6	0.10	-1.90	-1.80
43	151.2	-0.04	-1.95	-1.99

2238+00, MSU St. 48

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.08	-0.03	0.05
3	7.2	0.12	-0.05	0.07
4	10.8	0.16	-0.08	0.08
5	14.4	0.12	-0.11	0.01
6	18.0	0.10	-0.14	-0.04
7	21.6	0.12	-0.16	-0.04
8	25.2	0.09	-0.19	-0.10
9	28.8	0.09	-0.22	-0.13
10	32.4	0.11	-0.25	-0.14
11	36.0	0.14	-0.27	-0.13
12	39.6	0.19	-0.30	-0.11
13	43.2	0.21	-0.33	-0.12
14	46.8	0.28	-0.35	-0.07
15	50.4	0.34	-0.38	-0.04
16	54.0	0.37	-0.41	-0.04
17	57.6	0.41	-0.44	-0.03
18	61.2	0.48	-0.46	0.02
19	64.8	0.47	-0.49	-0.02
20	68.4	0.49	-0.52	-0.03
21	72.0	0.50	-0.55	-0.05
22	75.6	0.49	-0.57	-0.08
23	79.2	0.48	-0.60	-0.12
24	82.8	0.49	-0.63	-0.14
25	86.4	0.46	-0.65	-0.19
26	90.0	0.42	-0.68	-0.26
27	93.6	0.41	-0.71	-0.30
28	97.2	0.37	-0.74	-0.37
29	100.8	0.35	-0.76	-0.41
30	104.4	0.35	-0.79	-0.44
31	108.0	0.33	-0.82	-0.49
32	111.6	0.38	-0.85	-0.47
33	115.2	0.40	-0.87	-0.47
34	118.8	0.40	-0.90	-0.50
35	122.4	0.41	-0.93	-0.52
36	126.0	0.45	-0.95	-0.50
37	129.6	0.44	-0.98	-0.54
38	133.2	0.43	-1.01	-0.58
39	136.8	0.40	-1.04	-0.64
40	140.4	0.43	-1.06	-0.63
41	144.0	0.30	-1.09	-0.79
42	147.6	0.18	-1.12	-0.94
43	151.2	0.07	-1.15	-1.08

Table 44.12: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2244+00, MSU St. 49

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.09	-0.05	0.04
3	7.2	0.10	-0.11	-0.01
4	10.8	0.11	-0.16	-0.05
5	14.4	0.11	-0.22	-0.11
6	18.0	0.09	-0.27	-0.18
7	21.6	0.10	-0.33	-0.23
8	25.2	0.10	-0.38	-0.28
9	28.8	0.10	-0.44	-0.34
10	32.4	0.13	-0.49	-0.36
11	36.0	0.18	-0.55	-0.37
12	39.6	0.21	-0.60	-0.39
13	43.2	0.29	-0.65	-0.36
14	46.8	0.31	-0.71	-0.40
15	50.4	0.37	-0.76	-0.39
16	54.0	0.40	-0.82	-0.42
17	57.6	0.42	-0.87	-0.45
18	61.2	0.47	-0.93	-0.46
19	64.8	0.48	-0.98	-0.50
20	68.4	0.50	-1.04	-0.54
21	72.0	0.52	-1.09	-0.57
22	75.6	0.50	-1.15	-0.65
23	79.2	0.50	-1.20	-0.70
24	82.8	0.49	-1.25	-0.76
25	86.4	0.41	-1.31	-0.90
26	90.0	0.40	-1.36	-0.96
27	93.6	0.39	-1.42	-1.03
28	97.2	0.37	-1.47	-1.10
29	100.8	0.37	-1.53	-1.16
30	104.4	0.39	-1.58	-1.19
31	108.0	0.40	-1.64	-1.24
32	111.6	0.42	-1.69	-1.27
33	115.2	0.42	-1.75	-1.33
34	118.8	0.47	-1.80	-1.33
35	122.4	0.55	-1.85	-1.30
36	126.0	0.59	-1.91	-1.32
37	129.6	0.52	-1.96	-1.44
38	133.2	0.54	-2.02	-1.48
39	136.8	0.41	-2.07	-1.66
40	140.4	0.27	-2.13	-1.86
41	144.0	0.18	-2.18	-2.00
42	147.6	0.07	-2.24	-2.17
43	151.2	-0.07	-2.29	-2.36

2250+00, MSU St. 50

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.00	-0.04	-0.04
3	7.2	0.01	-0.07	-0.06
4	10.8	0.02	-0.11	-0.09
5	14.4	0.03	-0.14	-0.11
6	18.0	0.01	-0.18	-0.17
7	21.6	0.00	-0.21	-0.21
8	25.2	0.01	-0.25	-0.24
9	28.8	0.04	-0.28	-0.24
10	32.4	0.07	-0.32	-0.25
11	36.0	0.09	-0.35	-0.26
12	39.6	0.13	-0.39	-0.26
13	43.2	0.19	-0.43	-0.24
14	46.8	0.22	-0.46	-0.24
15	50.4	0.33	-0.50	-0.17
16	54.0	0.31	-0.53	-0.22
17	57.6	0.34	-0.57	-0.23
18	61.2	0.39	-0.60	-0.21
19	64.8	0.40	-0.64	-0.24
20	68.4	0.41	-0.67	-0.26
21	72.0	0.42	-0.71	-0.29
22	75.6	0.43	-0.74	-0.31
23	79.2	0.43	-0.78	-0.35
24	82.8	0.43	-0.82	-0.39
25	86.4	0.41	-0.85	-0.44
26	90.0	0.39	-0.89	-0.50
27	93.6	0.39	-0.92	-0.53
28	97.2	0.39	-0.96	-0.57
29	100.8	0.40	-0.99	-0.59
30	104.4	0.40	-1.03	-0.63
31	108.0	0.39	-1.06	-0.67
32	111.6	0.40	-1.10	-0.70
33	115.2	0.43	-1.13	-0.70
34	118.8	0.46	-1.17	-0.71
35	122.4	0.50	-1.21	-0.71
36	126.0	0.51	-1.24	-0.73
37	129.6	0.52	-1.28	-0.76
38	133.2	0.54	-1.31	-0.77
39	136.8	0.54	-1.35	-0.81
40	140.4	0.40	-1.38	-0.98
41	144.0	0.29	-1.42	-1.13
42	147.6	0.09	-1.45	-1.36
43	151.2	-0.10	-1.49	-1.59

Table 44.13: Coordinate System of the Fifth Annual Post-Construction Pavement Profile of Eastbound Driving Lane.

2254+00, MSU St. 51

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.03	-0.05	-0.02
3	7.2	0.04	-0.10	-0.06
4	10.8	0.09	-0.16	-0.07
5	14.4	0.05	-0.21	-0.16
6	18.0	0.07	-0.26	-0.19
7	21.6	0.09	-0.31	-0.22
8	25.2	0.09	-0.36	-0.27
9	28.8	0.12	-0.41	-0.29
10	32.4	0.18	-0.47	-0.29
11	36.0	0.20	-0.52	-0.32
12	39.6	0.27	-0.57	-0.30
13	43.2	0.30	-0.62	-0.32
14	46.8	0.30	-0.67	-0.37
15	50.4	0.34	-0.73	-0.39
16	54.0	0.38	-0.78	-0.40
17	57.6	0.41	-0.83	-0.42
18	61.2	0.45	-0.88	-0.43
19	64.8	0.44	-0.93	-0.49
20	68.4	0.44	-0.98	-0.54
21	72.0	0.44	-1.04	-0.60
22	75.6	0.41	-1.09	-0.68
23	79.2	0.39	-1.14	-0.75
24	82.8	0.40	-1.19	-0.79
25	86.4	0.34	-1.24	-0.90
26	90.0	0.30	-1.30	-1.00
27	93.6	0.29	-1.35	-1.06
28	97.2	0.27	-1.40	-1.13
29	100.8	0.29	-1.45	-1.16
30	104.4	0.29	-1.50	-1.21
31	108.0	0.29	-1.55	-1.26
32	111.6	0.33	-1.61	-1.28
33	115.2	0.31	-1.66	-1.35
34	118.8	0.36	-1.71	-1.35
35	122.4	0.38	-1.76	-1.38
36	126.0	0.39	-1.81	-1.42
37	129.6	0.34	-1.87	-1.53
38	133.2	0.33	-1.92	-1.59
39	136.8	0.35	-1.97	-1.62
40	140.4	0.24	-2.02	-1.78
41	144.0	0.11	-2.07	-1.96
42	147.6	0.00	-2.12	-2.12
43	151.2	-0.11	-2.18	-2.29

2260+00, MSU St. 52

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
1	0.0	0.00	0.00	0.00
2	3.6	0.06	-0.07	-0.01
3	7.2	0.10	-0.14	-0.04
4	10.8	0.12	-0.20	-0.08
5	14.4	0.13	-0.27	-0.14
6	18.0	0.14	-0.34	-0.20
7	21.6	0.11	-0.41	-0.30
8	25.2	0.11	-0.48	-0.37
9	28.8	0.16	-0.55	-0.39
10	32.4	0.15	-0.61	-0.46
11	36.0	0.20	-0.68	-0.48
12	39.6	0.26	-0.75	-0.49
13	43.2	0.29	-0.82	-0.53
14	46.8	0.37	-0.89	-0.52
15	50.4	0.46	-0.95	-0.49
16	54.0	0.48	-1.02	-0.54
17	57.6	0.54	-1.09	-0.55
18	61.2	0.61	-1.16	-0.55
19	64.8	0.61	-1.23	-0.62
20	68.4	0.64	-1.30	-0.66
21	72.0	0.62	-1.36	-0.74
22	75.6	0.65	-1.43	-0.78
23	79.2	0.65	-1.50	-0.85
24	82.8	0.68	-1.57	-0.89
25	86.4	0.65	-1.64	-0.99
26	90.0	0.64	-1.70	-1.06
27	93.6	0.60	-1.77	-1.17
28	97.2	0.57	-1.84	-1.27
29	100.8	0.55	-1.91	-1.36
30	104.4	0.58	-1.98	-1.40
31	108.0	0.65	-2.05	-1.40
32	111.6	0.67	-2.11	-1.44
33	115.2	0.73	-2.18	-1.45
34	118.8	0.81	-2.25	-1.44
35	122.4	0.85	-2.32	-1.47
36	126.0	0.87	-2.39	-1.52
37	129.6	0.89	-2.45	-1.56
38	133.2	0.89	-2.52	-1.63
39	136.8	0.90	-2.59	-1.69
40	140.4	0.77	-2.66	-1.89
41	144.0	0.65	-2.73	-2.08
42	147.6	0.54	-2.80	-2.26
43	151.2	0.45	-2.86	-2.41

Table 45.1: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2130+00, MSU St. 27

Point	Pavement Width (X)	Width Feet	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-12.6	-0.16	-1.49	-1.65
42	147.6	-12.3	-0.18	-1.45	-1.63
41	144.0	-12.0	-0.16	-1.42	-1.58
40	140.4	-11.7	-0.17	-1.38	-1.55
39	136.8	-11.4	-0.18	-1.35	-1.53
38	133.2	-11.1	-0.20	-1.31	-1.51
37	129.6	-10.8	-0.16	-1.28	-1.44
36	126.0	-10.5	-0.14	-1.24	-1.38
35	122.4	-10.2	-0.13	-1.21	-1.34
34	118.8	-9.9	-0.10	-1.17	-1.27
33	115.2	-9.6	-0.09	-1.13	-1.22
32	111.6	-9.3	-0.07	-1.10	-1.17
31	108.0	-9.0	-0.05	-1.06	-1.11
30	104.4	-8.7	-0.04	-1.03	-1.07
29	100.8	-8.4	-0.03	-0.99	-1.02
28	97.2	-8.1	-0.03	-0.96	-0.99
27	93.6	-7.8	-0.03	-0.92	-0.95
26	90.0	-7.5	-0.03	-0.89	-0.92
25	86.4	-7.2	-0.03	-0.85	-0.88
24	82.8	-6.9	-0.09	-0.82	-0.91
23	79.2	-6.6	-0.08	-0.78	-0.86
22	75.6	-6.3	-0.07	-0.74	-0.81
21	72.0	-6.0	-0.06	-0.71	-0.77
20	68.4	-5.7	-0.08	-0.67	-0.75
19	64.8	-5.4	-0.07	-0.64	-0.71
18	61.2	-5.1	-0.07	-0.60	-0.67
17	57.6	-4.8	-0.09	-0.57	-0.66
16	54.0	-4.5	-0.06	-0.53	-0.59
15	50.4	-4.2	-0.05	-0.50	-0.55
14	46.8	-3.9	-0.06	-0.46	-0.52
13	43.2	-3.6	-0.04	-0.43	-0.47
12	39.6	-3.3	-0.02	-0.39	-0.41
11	36.0	-3.0	-0.05	-0.35	-0.40
10	32.4	-2.7	-0.01	-0.32	-0.33
9	28.8	-2.4	-0.02	-0.28	-0.30
8	25.2	-2.1	0.00	-0.25	-0.25
7	21.6	-1.8	0.03	-0.21	-0.18
6	18.0	-1.5	0.06	-0.18	-0.12
5	14.4	-1.2	0.07	-0.14	-0.07
4	10.8	-0.9	0.10	-0.11	-0.01
3	7.2	-0.6	0.09	-0.07	0.02
2	3.6	-0.3	0.04	-0.04	0.00
1	0.0	0.0	0.00	0.00	0.00

2134+00, MSU St. 28

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.24	-1.37	-1.61
42	147.6	-0.23	-1.34	-1.57
41	144.0	-0.23	-1.31	-1.54
40	140.4	-0.22	-1.28	-1.50
39	136.8	-0.20	-1.24	-1.44
38	133.2	-0.20	-1.21	-1.41
37	129.6	-0.19	-1.18	-1.37
36	126.0	-0.14	-1.15	-1.29
35	122.4	-0.12	-1.11	-1.23
34	118.8	-0.10	-1.08	-1.18
33	115.2	-0.08	-1.05	-1.13
32	111.6	-0.09	-1.01	-1.10
31	108.0	-0.07	-0.98	-1.05
30	104.4	-0.06	-0.95	-1.01
29	100.8	-0.05	-0.92	-0.97
28	97.2	-0.02	-0.88	-0.90
27	93.6	0.00	-0.85	-0.85
26	90.0	-0.04	-0.82	-0.86
25	86.4	-0.01	-0.79	-0.80
24	82.8	-0.01	-0.75	-0.76
23	79.2	-0.03	-0.72	-0.75
22	75.6	0.00	-0.69	-0.69
21	72.0	-0.01	-0.65	-0.66
20	68.4	-0.01	-0.62	-0.63
19	64.8	0.00	-0.59	-0.59
18	61.2	0.00	-0.56	-0.56
17	57.6	0.00	-0.52	-0.52
16	54.0	0.05	-0.49	-0.44
15	50.4	0.06	-0.46	-0.40
14	46.8	0.07	-0.43	-0.36
13	43.2	0.07	-0.39	-0.32
12	39.6	0.07	-0.36	-0.29
11	36.0	0.07	-0.33	-0.26
10	32.4	0.08	-0.29	-0.21
9	28.8	0.08	-0.26	-0.18
8	25.2	0.13	-0.23	-0.10
7	21.6	0.18	-0.20	-0.02
6	18.0	0.21	-0.16	0.05
5	14.4	0.21	-0.13	0.08
4	10.8	0.19	-0.10	0.09
3	7.2	0.12	-0.07	0.05
2	3.6	0.07	-0.03	0.04
1	0.0	0.00	0.00	0.00

Table 45.2: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2138+00, MSU St. 29

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.03	-1.60	-1.63
42	147.6	0.02	-1.57	-1.55
41	144.0	0.04	-1.53	-1.49
40	140.4	0.08	-1.49	-1.41
39	136.8	0.06	-1.45	-1.39
38	133.2	0.04	-1.41	-1.37
37	129.6	0.05	-1.37	-1.32
36	126.0	0.05	-1.34	-1.29
35	122.4	0.03	-1.30	-1.27
34	118.8	0.06	-1.26	-1.20
33	115.2	0.05	-1.22	-1.17
32	111.6	0.06	-1.18	-1.12
31	108.0	0.08	-1.15	-1.07
30	104.4	0.08	-1.11	-1.03
29	100.8	0.07	-1.07	-1.00
28	97.2	0.09	-1.03	-0.94
27	93.6	0.07	-0.99	-0.92
26	90.0	0.07	-0.95	-0.88
25	86.4	0.07	-0.92	-0.85
24	82.8	0.07	-0.88	-0.81
23	79.2	0.05	-0.84	-0.79
22	75.6	0.05	-0.80	-0.75
21	72.0	0.04	-0.76	-0.72
20	68.4	0.03	-0.73	-0.70
19	64.8	0.01	-0.69	-0.68
18	61.2	0.02	-0.65	-0.63
17	57.6	0.01	-0.61	-0.60
16	54.0	0.00	-0.57	-0.57
15	50.4	0.00	-0.53	-0.53
14	46.8	-0.01	-0.50	-0.51
13	43.2	0.00	-0.46	-0.46
12	39.6	0.00	-0.42	-0.42
11	36.0	0.00	-0.38	-0.38
10	32.4	-0.02	-0.34	-0.36
9	28.8	0.00	-0.31	-0.31
8	25.2	-0.01	-0.27	-0.28
7	21.6	-0.01	-0.23	-0.24
6	18.0	0.00	-0.19	-0.19
5	14.4	0.00	-0.15	-0.15
4	10.8	0.00	-0.11	-0.11
3	7.2	0.02	-0.08	-0.06
2	3.6	0.04	-0.04	0.00
1	0.0	0.00	0.00	0.00

2144+00, MSU St. 30

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.11	-1.95	-2.06
42	147.6	-0.05	-1.90	-1.95
41	144.0	-0.04	-1.85	-1.89
40	140.4	-0.04	-1.81	-1.85
39	136.8	-0.07	-1.76	-1.83
38	133.2	-0.08	-1.72	-1.80
37	129.6	-0.07	-1.67	-1.74
36	126.0	-0.07	-1.62	-1.69
35	122.4	-0.07	-1.58	-1.65
34	118.8	-0.04	-1.53	-1.57
33	115.2	-0.04	-1.48	-1.52
32	111.6	-0.05	-1.44	-1.49
31	108.0	-0.01	-1.39	-1.40
30	104.4	0.00	-1.34	-1.34
29	100.8	0.00	-1.30	-1.30
28	97.2	0.01	-1.25	-1.24
27	93.6	0.00	-1.21	-1.21
26	90.0	-0.01	-1.16	-1.17
25	86.4	-0.02	-1.11	-1.13
24	82.8	-0.03	-1.07	-1.10
23	79.2	-0.06	-1.02	-1.08
22	75.6	-0.06	-0.97	-1.03
21	72.0	-0.07	-0.93	-1.00
20	68.4	-0.07	-0.88	-0.95
19	64.8	-0.07	-0.83	-0.90
18	61.2	-0.09	-0.79	-0.88
17	57.6	-0.10	-0.74	-0.84
16	54.0	-0.10	-0.70	-0.80
15	50.4	-0.10	-0.65	-0.75
14	46.8	-0.10	-0.60	-0.70
13	43.2	-0.10	-0.56	-0.66
12	39.6	-0.08	-0.51	-0.59
11	36.0	-0.07	-0.46	-0.53
10	32.4	-0.07	-0.42	-0.49
9	28.8	-0.04	-0.37	-0.41
8	25.2	-0.04	-0.32	-0.36
7	21.6	-0.04	-0.28	-0.32
6	18.0	-0.01	-0.23	-0.24
5	14.4	0.00	-0.19	-0.19
4	10.8	-0.01	-0.14	-0.15
3	7.2	0.01	-0.09	-0.08
2	3.6	0.04	-0.05	-0.01
1	0.0	0.00	0.00	0.00

Table 45.3: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2150+00, MSU St. 31

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.23	-1.03	-1.26
42	147.6	-0.17	-1.01	-1.18
41	144.0	-0.19	-0.98	-1.17
40	140.4	-0.20	-0.96	-1.16
39	136.8	-0.19	-0.93	-1.12
38	133.2	-0.19	-0.91	-1.10
37	129.6	-0.17	-0.88	-1.05
36	126.0	-0.13	-0.86	-0.99
35	122.4	-0.13	-0.83	-0.96
34	118.8	-0.13	-0.81	-0.94
33	115.2	-0.11	-0.79	-0.90
32	111.6	-0.10	-0.76	-0.86
31	108.0	-0.07	-0.74	-0.81
30	104.4	-0.05	-0.71	-0.76
29	100.8	-0.03	-0.69	-0.72
28	97.2	-0.01	-0.66	-0.67
27	93.6	0.00	-0.64	-0.64
26	90.0	0.00	-0.61	-0.61
25	86.4	0.00	-0.59	-0.59
24	82.8	0.00	-0.56	-0.56
23	79.2	0.00	-0.54	-0.54
22	75.6	0.00	-0.52	-0.52
21	72.0	-0.01	-0.49	-0.50
20	68.4	-0.03	-0.47	-0.50
19	64.8	-0.04	-0.44	-0.48
18	61.2	-0.03	-0.42	-0.45
17	57.6	-0.04	-0.39	-0.43
16	54.0	-0.05	-0.37	-0.42
15	50.4	-0.03	-0.34	-0.37
14	46.8	-0.03	-0.32	-0.35
13	43.2	-0.03	-0.29	-0.32
12	39.6	-0.02	-0.27	-0.29
11	36.0	-0.04	-0.25	-0.29
10	32.4	-0.05	-0.22	-0.27
9	28.8	-0.02	-0.20	-0.22
8	25.2	-0.02	-0.17	-0.19
7	21.6	-0.03	-0.15	-0.18
6	18.0	-0.01	-0.12	-0.13
5	14.4	0.00	-0.10	-0.10
4	10.8	0.00	-0.07	-0.07
3	7.2	0.01	-0.05	-0.04
2	3.6	0.01	-0.02	-0.01
1	0.0	0.00	0.00	0.00

2154+00, MSU St. 32

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.10	-1.49	-1.59
42	147.6	-0.08	-1.45	-1.53
41	144.0	-0.11	-1.42	-1.53
40	140.4	-0.11	-1.38	-1.49
39	136.8	-0.11	-1.35	-1.46
38	133.2	-0.13	-1.31	-1.44
37	129.6	-0.11	-1.28	-1.39
36	126.0	-0.09	-1.24	-1.33
35	122.4	-0.09	-1.21	-1.30
34	118.8	-0.08	-1.17	-1.25
33	115.2	-0.06	-1.13	-1.19
32	111.6	-0.04	-1.10	-1.14
31	108.0	-0.04	-1.06	-1.10
30	104.4	-0.03	-1.03	-1.06
29	100.8	-0.02	-0.99	-1.01
28	97.2	-0.02	-0.96	-0.98
27	93.6	0.00	-0.92	-0.92
26	90.0	0.00	-0.89	-0.89
25	86.4	-0.01	-0.85	-0.86
24	82.8	0.00	-0.82	-0.82
23	79.2	0.00	-0.78	-0.78
22	75.6	-0.02	-0.74	-0.76
21	72.0	0.00	-0.71	-0.71
20	68.4	-0.02	-0.67	-0.69
19	64.8	-0.03	-0.64	-0.67
18	61.2	-0.01	-0.60	-0.61
17	57.6	-0.04	-0.57	-0.61
16	54.0	-0.04	-0.53	-0.57
15	50.4	-0.03	-0.50	-0.53
14	46.8	-0.02	-0.46	-0.48
13	43.2	-0.04	-0.43	-0.47
12	39.6	-0.01	-0.39	-0.40
11	36.0	-0.03	-0.35	-0.38
10	32.4	-0.03	-0.32	-0.35
9	28.8	-0.02	-0.28	-0.30
8	25.2	-0.01	-0.25	-0.26
7	21.6	0.00	-0.21	-0.21
6	18.0	0.01	-0.18	-0.17
5	14.4	0.03	-0.14	-0.11
4	10.8	0.04	-0.11	-0.07
3	7.2	0.03	-0.07	-0.04
2	3.6	0.02	-0.04	-0.02
1	0.0	0.00	0.00	0.00

Table 45.4: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2160+00, MSU St. 33

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.02	-1.60	-1.62
42	147.6	0.01	-1.57	-1.56
41	144.0	-0.02	-1.53	-1.55
40	140.4	-0.04	-1.49	-1.53
39	136.8	-0.01	-1.45	-1.46
38	133.2	-0.01	-1.41	-1.42
37	129.6	-0.04	-1.37	-1.41
36	126.0	-0.03	-1.34	-1.37
35	122.4	-0.01	-1.30	-1.31
34	118.8	0.00	-1.26	-1.26
33	115.2	0.02	-1.22	-1.20
32	111.6	0.03	-1.18	-1.15
31	108.0	0.04	-1.15	-1.11
30	104.4	0.06	-1.11	-1.05
29	100.8	0.07	-1.07	-1.00
28	97.2	0.09	-1.03	-0.94
27	93.6	0.10	-0.99	-0.89
26	90.0	0.10	-0.95	-0.85
25	86.4	0.11	-0.92	-0.81
24	82.8	0.10	-0.88	-0.78
23	79.2	0.08	-0.84	-0.76
22	75.6	0.07	-0.80	-0.73
21	72.0	0.05	-0.76	-0.71
20	68.4	0.05	-0.73	-0.68
19	64.8	0.04	-0.69	-0.65
18	61.2	0.07	-0.65	-0.58
17	57.6	0.06	-0.61	-0.55
16	54.0	0.04	-0.57	-0.53
15	50.4	0.08	-0.53	-0.45
14	46.8	0.07	-0.50	-0.43
13	43.2	0.06	-0.46	-0.40
12	39.6	0.08	-0.42	-0.34
11	36.0	0.07	-0.38	-0.31
10	32.4	0.06	-0.34	-0.28
9	28.8	0.07	-0.31	-0.24
8	25.2	0.07	-0.27	-0.20
7	21.6	0.07	-0.23	-0.16
6	18.0	0.08	-0.19	-0.11
5	14.4	0.10	-0.15	-0.05
4	10.8	0.09	-0.11	-0.02
3	7.2	0.09	-0.08	0.01
2	3.6	0.06	-0.04	0.02
1	0.0	0.00	0.00	0.00

2164+00, MSU St. 34

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.11	-1.37	-1.48
42	147.6	-0.08	-1.34	-1.42
41	144.0	-0.10	-1.31	-1.41
40	140.4	-0.10	-1.28	-1.38
39	136.8	-0.10	-1.24	-1.34
38	133.2	-0.08	-1.21	-1.29
37	129.6	-0.08	-1.18	-1.26
36	126.0	-0.08	-1.15	-1.23
35	122.4	-0.06	-1.11	-1.17
34	118.8	-0.04	-1.08	-1.12
33	115.2	-0.02	-1.05	-1.07
32	111.6	-0.01	-1.01	-1.02
31	108.0	0.04	-0.98	-0.94
30	104.4	0.07	-0.95	-0.88
29	100.8	0.09	-0.92	-0.83
28	97.2	0.10	-0.88	-0.78
27	93.6	0.10	-0.85	-0.75
26	90.0	0.10	-0.82	-0.72
25	86.4	0.09	-0.79	-0.70
24	82.8	0.10	-0.75	-0.65
23	79.2	0.09	-0.72	-0.63
22	75.6	0.06	-0.69	-0.63
21	72.0	0.07	-0.65	-0.58
20	68.4	0.04	-0.62	-0.58
19	64.8	0.01	-0.59	-0.58
18	61.2	0.01	-0.56	-0.55
17	57.6	-0.01	-0.52	-0.53
16	54.0	-0.02	-0.49	-0.51
15	50.4	0.01	-0.46	-0.45
14	46.8	0.02	-0.43	-0.41
13	43.2	0.03	-0.39	-0.36
12	39.6	0.06	-0.36	-0.30
11	36.0	0.06	-0.33	-0.27
10	32.4	0.04	-0.29	-0.25
9	28.8	0.06	-0.26	-0.20
8	25.2	0.05	-0.23	-0.18
7	21.6	0.05	-0.20	-0.15
6	18.0	0.05	-0.16	-0.11
5	14.4	0.05	-0.13	-0.08
4	10.8	0.04	-0.10	-0.06
3	7.2	0.04	-0.07	-0.03
2	3.6	0.06	-0.03	0.03
1	0.0	0.00	0.00	0.00

Table 45.5: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2170+00, MSU St. 35

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	0.21	-2.06	-1.85
42	147.6	0.25	-2.01	-1.76
41	144.0	0.21	-1.96	-1.75
40	140.4	0.20	-1.91	-1.71
39	136.8	0.19	-1.87	-1.68
38	133.2	0.19	-1.82	-1.63
37	129.6	0.18	-1.77	-1.59
36	126.0	0.18	-1.72	-1.54
35	122.4	0.20	-1.67	-1.47
34	118.8	0.19	-1.62	-1.43
33	115.2	0.18	-1.57	-1.39
32	111.6	0.19	-1.52	-1.33
31	108.0	0.19	-1.47	-1.28
30	104.4	0.17	-1.42	-1.25
29	100.8	0.20	-1.37	-1.17
28	97.2	0.22	-1.33	-1.11
27	93.6	0.20	-1.28	-1.08
26	90.0	0.20	-1.23	-1.03
25	86.4	0.21	-1.18	-0.97
24	82.8	0.20	-1.13	-0.93
23	79.2	0.20	-1.08	-0.88
22	75.6	0.20	-1.03	-0.83
21	72.0	0.18	-0.98	-0.80
20	68.4	0.17	-0.93	-0.76
19	64.8	0.13	-0.88	-0.75
18	61.2	0.12	-0.83	-0.71
17	57.6	0.12	-0.79	-0.67
16	54.0	0.10	-0.74	-0.64
15	50.4	0.09	-0.69	-0.60
14	46.8	0.10	-0.64	-0.54
13	43.2	0.08	-0.59	-0.51
12	39.6	0.08	-0.54	-0.46
11	36.0	0.09	-0.49	-0.40
10	32.4	0.07	-0.44	-0.37
9	28.8	0.07	-0.39	-0.32
8	25.2	0.08	-0.34	-0.26
7	21.6	0.09	-0.29	-0.20
6	18.0	0.05	-0.25	-0.20
5	14.4	0.06	-0.20	-0.14
4	10.8	0.04	-0.15	-0.11
3	7.2	0.05	-0.10	-0.05
2	3.6	0.06	-0.05	0.01
1	0.0	0.00	0.00	0.00

2176+00, MSU St. 36

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.16	-1.60	-1.76
42	147.6	-0.14	-1.57	-1.71
41	144.0	-0.08	-1.53	-1.61
40	140.4	-0.12	-1.49	-1.61
39	136.8	-0.11	-1.45	-1.56
38	133.2	-0.09	-1.41	-1.50
37	129.6	-0.09	-1.37	-1.46
36	126.0	-0.07	-1.34	-1.41
35	122.4	-0.04	-1.30	-1.34
34	118.8	-0.04	-1.26	-1.30
33	115.2	-0.06	-1.22	-1.28
32	111.6	-0.05	-1.18	-1.23
31	108.0	0.00	-1.15	-1.15
30	104.4	0.00	-1.11	-1.11
29	100.8	0.02	-1.07	-1.05
28	97.2	0.03	-1.03	-1.00
27	93.6	0.03	-0.99	-0.96
26	90.0	0.03	-0.95	-0.92
25	86.4	0.06	-0.92	-0.86
24	82.8	0.06	-0.88	-0.82
23	79.2	0.04	-0.84	-0.80
22	75.6	0.05	-0.80	-0.75
21	72.0	0.04	-0.76	-0.72
20	68.4	0.06	-0.73	-0.67
19	64.8	0.09	-0.69	-0.60
18	61.2	0.09	-0.65	-0.56
17	57.6	0.07	-0.61	-0.54
16	54.0	0.09	-0.57	-0.48
15	50.4	0.08	-0.53	-0.45
14	46.8	0.08	-0.50	-0.42
13	43.2	0.08	-0.46	-0.38
12	39.6	0.07	-0.42	-0.35
11	36.0	0.08	-0.38	-0.30
10	32.4	0.11	-0.34	-0.23
9	28.8	0.13	-0.31	-0.18
8	25.2	0.13	-0.27	-0.14
7	21.6	0.17	-0.23	-0.06
6	18.0	0.18	-0.19	-0.01
5	14.4	0.19	-0.15	0.04
4	10.8	0.20	-0.11	0.09
3	7.2	0.17	-0.08	0.09
2	3.6	0.14	-0.04	0.10
1	0.0	0.00	0.00	0.00

Table 45.6: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2180+00, MSU St. 37

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
44	154.8	0.00	-1.76	-1.76
43	151.2	-0.01	-1.72	-1.73
42	147.6	-0.03	-1.68	-1.71
41	144.0	-0.07	-1.64	-1.71
40	140.4	-0.07	-1.60	-1.67
39	136.8	-0.06	-1.55	-1.61
38	133.2	-0.05	-1.51	-1.56
37	129.6	-0.04	-1.47	-1.51
36	126.0	-0.01	-1.43	-1.44
35	122.4	-0.01	-1.39	-1.40
34	118.8	0.00	-1.35	-1.35
33	115.2	0.01	-1.31	-1.30
32	111.6	0.02	-1.27	-1.25
31	108.0	0.03	-1.23	-1.20
30	104.4	0.04	-1.19	-1.15
29	100.8	0.04	-1.15	-1.11
28	97.2	0.04	-1.10	-1.06
27	93.6	0.05	-1.06	-1.01
26	90.0	0.06	-1.02	-0.96
25	86.4	0.05	-0.98	-0.93
24	82.8	0.03	-0.94	-0.91
23	79.2	0.03	-0.90	-0.87
22	75.6	0.05	-0.86	-0.81
21	72.0	0.03	-0.82	-0.79
20	68.4	0.01	-0.78	-0.77
19	64.8	0.02	-0.74	-0.72
18	61.2	0.00	-0.70	-0.70
17	57.6	0.00	-0.65	-0.65
16	54.0	0.04	-0.61	-0.57
15	50.4	0.05	-0.57	-0.52
14	46.8	0.04	-0.53	-0.49
13	43.2	0.05	-0.49	-0.44
12	39.6	0.07	-0.45	-0.38
11	36.0	0.07	-0.41	-0.34
10	32.4	0.05	-0.37	-0.32
9	28.8	0.05	-0.33	-0.28
8	25.2	0.06	-0.29	-0.23
7	21.6	0.07	-0.25	-0.18
6	18.0	0.06	-0.20	-0.14
5	14.4	0.06	-0.16	-0.10
4	10.8	0.04	-0.12	-0.08
3	7.2	0.01	-0.08	-0.07
2	3.6	0.01	-0.04	-0.03
1	0.0	0.00	0.00	0.00

2184+00, MSU St. 38

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	0.10	-1.95	-1.85
42	147.6	0.08	-1.90	-1.82
41	144.0	0.07	-1.85	-1.78
40	140.4	0.05	-1.81	-1.76
39	136.8	0.03	-1.76	-1.73
38	133.2	0.02	-1.72	-1.70
37	129.6	0.05	-1.67	-1.62
36	126.0	0.04	-1.62	-1.58
35	122.4	0.04	-1.58	-1.54
34	118.8	0.05	-1.53	-1.48
33	115.2	0.07	-1.48	-1.41
32	111.6	0.08	-1.44	-1.36
31	108.0	0.09	-1.39	-1.30
30	104.4	0.11	-1.34	-1.23
29	100.8	0.10	-1.30	-1.20
28	97.2	0.09	-1.25	-1.16
27	93.6	0.10	-1.21	-1.11
26	90.0	0.09	-1.16	-1.07
25	86.4	0.09	-1.11	-1.02
24	82.8	0.09	-1.07	-0.98
23	79.2	0.07	-1.02	-0.95
22	75.6	0.07	-0.97	-0.90
21	72.0	0.09	-0.93	-0.84
20	68.4	0.08	-0.88	-0.80
19	64.8	0.04	-0.83	-0.79
18	61.2	0.06	-0.79	-0.73
17	57.6	0.05	-0.74	-0.69
16	54.0	0.04	-0.70	-0.66
15	50.4	0.05	-0.65	-0.60
14	46.8	0.05	-0.60	-0.55
13	43.2	0.05	-0.56	-0.51
12	39.6	0.07	-0.51	-0.44
11	36.0	0.08	-0.46	-0.38
10	32.4	0.07	-0.42	-0.35
9	28.8	0.09	-0.37	-0.28
8	25.2	0.09	-0.32	-0.23
7	21.6	0.10	-0.28	-0.18
6	18.0	0.11	-0.23	-0.12
5	14.4	0.11	-0.19	-0.08
4	10.8	0.09	-0.14	-0.05
3	7.2	0.09	-0.09	-0.00
2	3.6	0.06	-0.05	0.01
1	0.0	0.00	0.00	0.00

Table 45.7: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2188+00, MSU St. 39

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
44	154.8	-0.30	-1.41	-1.71
43	151.2	-0.10	-1.37	-1.47
42	147.6	-0.17	-1.34	-1.51
41	144.0	0.07	-1.31	-1.24
40	140.4	0.10	-1.28	-1.18
39	136.8	0.14	-1.24	-1.10
38	133.2	0.10	-1.21	-1.11
37	129.6	0.10	-1.18	-1.08
36	126.0	0.07	-1.15	-1.08
35	122.4	0.04	-1.11	-1.07
34	118.8	0.06	-1.08	-1.02
33	115.2	0.06	-1.05	-0.99
32	111.6	0.07	-1.01	-0.94
31	108.0	0.06	-0.98	-0.92
30	104.4	0.09	-0.95	-0.86
29	100.8	0.10	-0.92	-0.82
28	97.2	0.10	-0.88	-0.78
27	93.6	0.13	-0.85	-0.72
26	90.0	0.14	-0.82	-0.68
25	86.4	0.12	-0.79	-0.67
24	82.8	0.12	-0.75	-0.63
23	79.2	0.10	-0.72	-0.62
22	75.6	0.08	-0.69	-0.61
21	72.0	0.09	-0.65	-0.56
20	68.4	0.03	-0.62	-0.59
19	64.8	0.03	-0.59	-0.56
18	61.2	0.03	-0.56	-0.53
17	57.6	0.01	-0.52	-0.51
16	54.0	0.02	-0.49	-0.47
15	50.4	-0.01	-0.46	-0.47
14	46.8	-0.04	-0.43	-0.47
13	43.2	-0.04	-0.39	-0.43
12	39.6	-0.05	-0.36	-0.41
11	36.0	-0.05	-0.33	-0.38
10	32.4	-0.02	-0.29	-0.31
9	28.8	-0.01	-0.26	-0.27
8	25.2	-0.02	-0.23	-0.25
7	21.6	-0.03	-0.20	-0.23
6	18.0	-0.01	-0.16	-0.17
5	14.4	-0.04	-0.13	-0.17
4	10.8	-0.04	-0.10	-0.14
3	7.2	-0.03	-0.07	-0.10
2	3.6	-0.01	-0.03	-0.04
1	0.0	0.00	0.00	0.00

2192+00, MSU St. 40

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.12	-2.52	-2.64
42	147.6	-0.12	-2.46	-2.58
41	144.0	-0.11	-2.40	-2.51
40	140.4	-0.11	-2.34	-2.45
39	136.8	-0.11	-2.28	-2.39
38	133.2	-0.10	-2.22	-2.32
37	129.6	-0.09	-2.16	-2.25
36	126.0	-0.07	-2.10	-2.17
35	122.4	-0.04	-2.04	-2.08
34	118.8	-0.04	-1.98	-2.02
33	115.2	0.02	-1.92	-1.90
32	111.6	0.04	-1.86	-1.82
31	108.0	0.06	-1.80	-1.74
30	104.4	0.09	-1.74	-1.65
29	100.8	0.07	-1.68	-1.61
28	97.2	0.03	-1.62	-1.59
27	93.6	0.04	-1.56	-1.52
26	90.0	0.00	-1.50	-1.50
25	86.4	-0.03	-1.44	-1.47
24	82.8	0.00	-1.38	-1.38
23	79.2	-0.04	-1.32	-1.36
22	75.6	-0.05	-1.26	-1.31
21	72.0	-0.03	-1.20	-1.23
20	68.4	-0.04	-1.14	-1.18
19	64.8	-0.06	-1.08	-1.14
18	61.2	-0.04	-1.02	-1.06
17	57.6	-0.07	-0.96	-1.03
16	54.0	-0.03	-0.90	-0.93
15	50.4	0.00	-0.84	-0.84
14	46.8	0.00	-0.78	-0.78
13	43.2	0.00	-0.72	-0.72
12	39.6	0.01	-0.66	-0.65
11	36.0	0.00	-0.60	-0.60
10	32.4	0.00	-0.54	-0.54
9	28.8	0.01	-0.48	-0.47
8	25.2	0.02	-0.42	-0.40
7	21.6	0.04	-0.36	-0.32
6	18.0	0.08	-0.30	-0.22
5	14.4	0.07	-0.24	-0.17
4	10.8	0.05	-0.18	-0.13
3	7.2	0.03	-0.12	-0.09
2	3.6	0.03	-0.06	-0.03
1	0.0	0.00	0.00	0.00

Table 45.8: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2196+00, MSU St. 41

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.09	-2.63	-2.72
42	147.6	-0.08	-2.57	-2.65
41	144.0	0.00	-2.51	-2.51
40	140.4	0.01	-2.45	-2.44
39	136.8	-0.01	-2.38	-2.39
38	133.2	-0.02	-2.32	-2.34
37	129.6	-0.04	-2.26	-2.30
36	126.0	-0.04	-2.20	-2.24
35	122.4	-0.04	-2.13	-2.17
34	118.8	-0.02	-2.07	-2.09
33	115.2	-0.03	-2.01	-2.04
32	111.6	-0.01	-1.94	-1.95
31	108.0	-0.03	-1.88	-1.91
30	104.4	0.00	-1.82	-1.82
29	100.8	0.00	-1.76	-1.76
28	97.2	0.00	-1.69	-1.69
27	93.6	0.00	-1.63	-1.63
26	90.0	0.01	-1.57	-1.56
25	86.4	0.04	-1.51	-1.47
24	82.8	0.01	-1.44	-1.43
23	79.2	0.01	-1.38	-1.37
22	75.6	0.00	-1.32	-1.32
21	72.0	0.00	-1.25	-1.25
20	68.4	-0.02	-1.19	-1.21
19	64.8	-0.01	-1.13	-1.14
18	61.2	-0.01	-1.07	-1.08
17	57.6	-0.01	-1.00	-1.01
16	54.0	-0.03	-0.94	-0.97
15	50.4	-0.04	-0.88	-0.92
14	46.8	-0.08	-0.82	-0.90
13	43.2	-0.10	-0.75	-0.85
12	39.6	-0.10	-0.69	-0.79
11	36.0	-0.08	-0.63	-0.71
10	32.4	-0.08	-0.56	-0.64
9	28.8	-0.07	-0.50	-0.57
8	25.2	-0.07	-0.44	-0.51
7	21.6	-0.07	-0.38	-0.45
6	18.0	-0.07	-0.31	-0.38
5	14.4	-0.06	-0.25	-0.31
4	10.8	-0.04	-0.19	-0.23
3	7.2	-0.03	-0.13	-0.16
2	3.6	0.00	-0.06	-0.06
1	0.0	0.00	0.00	0.00

2200+00, MSU St. 42

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.19	-2.29	-2.48
42	147.6	-0.11	-2.24	-2.35
41	144.0	-0.17	-2.18	-2.35
40	140.4	-0.18	-2.13	-2.31
39	136.8	-0.19	-2.07	-2.26
38	133.2	-0.19	-2.02	-2.21
37	129.6	-0.17	-1.96	-2.13
36	126.0	-0.15	-1.91	-2.06
35	122.4	-0.15	-1.85	-2.00
34	118.8	-0.15	-1.80	-1.95
33	115.2	-0.11	-1.75	-1.86
32	111.6	-0.11	-1.69	-1.80
31	108.0	-0.10	-1.64	-1.74
30	104.4	-0.07	-1.58	-1.65
29	100.8	-0.05	-1.53	-1.58
28	97.2	-0.01	-1.47	-1.48
27	93.6	-0.01	-1.42	-1.43
26	90.0	0.00	-1.36	-1.36
25	86.4	0.00	-1.31	-1.31
24	82.8	0.00	-1.25	-1.25
23	79.2	-0.01	-1.20	-1.21
22	75.6	-0.02	-1.15	-1.17
21	72.0	-0.02	-1.09	-1.11
20	68.4	-0.01	-1.04	-1.05
19	64.8	-0.04	-0.98	-1.02
18	61.2	-0.07	-0.93	-1.00
17	57.6	-0.05	-0.87	-0.92
16	54.0	-0.04	-0.82	-0.86
15	50.4	-0.04	-0.76	-0.80
14	46.8	0.00	-0.71	-0.71
13	43.2	0.00	-0.65	-0.65
12	39.6	0.00	-0.60	-0.60
11	36.0	0.02	-0.55	-0.53
10	32.4	0.02	-0.49	-0.47
9	28.8	0.00	-0.44	-0.44
8	25.2	0.04	-0.38	-0.34
7	21.6	0.04	-0.33	-0.29
6	18.0	0.03	-0.27	-0.24
5	14.4	0.06	-0.22	-0.16
4	10.8	0.04	-0.16	-0.12
3	7.2	0.00	-0.11	-0.11
2	3.6	0.00	-0.05	-0.05
1	0.0	0.00	0.00	0.00

Table 45.9: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2208+00, MSU St. 43

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.30	-2.29	-2.59
42	147.6	-0.25	-2.24	-2.49
41	144.0	-0.29	-2.18	-2.47
40	140.4	-0.30	-2.13	-2.43
39	136.8	-0.27	-2.07	-2.34
38	133.2	-0.26	-2.02	-2.28
37	129.6	-0.25	-1.96	-2.21
36	126.0	-0.23	-1.91	-2.14
35	122.4	-0.23	-1.85	-2.08
34	118.8	-0.24	-1.80	-2.04
33	115.2	-0.21	-1.75	-1.96
32	111.6	-0.19	-1.69	-1.88
31	108.0	-0.19	-1.64	-1.83
30	104.4	-0.20	-1.58	-1.78
29	100.8	-0.18	-1.53	-1.71
28	97.2	-0.16	-1.47	-1.63
27	93.6	-0.17	-1.42	-1.59
26	90.0	-0.16	-1.36	-1.52
25	86.4	-0.15	-1.31	-1.46
24	82.8	-0.12	-1.25	-1.37
23	79.2	-0.14	-1.20	-1.34
22	75.6	-0.13	-1.15	-1.28
21	72.0	-0.11	-1.09	-1.20
20	68.4	-0.11	-1.04	-1.15
19	64.8	-0.12	-0.98	-1.10
18	61.2	-0.09	-0.93	-1.02
17	57.6	-0.10	-0.87	-0.97
16	54.0	-0.10	-0.82	-0.92
15	50.4	-0.08	-0.76	-0.84
14	46.8	-0.10	-0.71	-0.81
13	43.2	-0.07	-0.65	-0.72
12	39.6	-0.03	-0.60	-0.63
11	36.0	-0.03	-0.55	-0.58
10	32.4	-0.02	-0.49	-0.51
9	28.8	0.00	-0.44	-0.44
8	25.2	0.00	-0.38	-0.38
7	21.6	0.02	-0.33	-0.31
6	18.0	0.06	-0.27	-0.21
5	14.4	0.07	-0.22	-0.15
4	10.8	0.04	-0.16	-0.12
3	7.2	0.02	-0.11	-0.09
2	3.6	0.02	-0.05	-0.03
1	0.0	0.00	0.00	0.00

2214+00, MSU St. 44

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.07	-2.41	-2.48
42	147.6	-0.04	-2.35	-2.39
41	144.0	0.00	-2.29	-2.29
40	140.4	0.00	-2.23	-2.23
39	136.8	-0.03	-2.18	-2.21
38	133.2	-0.05	-2.12	-2.17
37	129.6	-0.07	-2.06	-2.13
36	126.0	-0.05	-2.00	-2.05
35	122.4	-0.03	-1.95	-1.98
34	118.8	-0.04	-1.89	-1.93
33	115.2	-0.03	-1.83	-1.86
32	111.6	-0.01	-1.78	-1.79
31	108.0	0.00	-1.72	-1.72
30	104.4	0.01	-1.66	-1.65
29	100.8	0.03	-1.60	-1.57
28	97.2	0.04	-1.55	-1.51
27	93.6	0.06	-1.49	-1.43
26	90.0	0.07	-1.43	-1.36
25	86.4	0.07	-1.37	-1.30
24	82.8	0.07	-1.32	-1.25
23	79.2	0.04	-1.26	-1.22
22	75.6	0.00	-1.20	-1.20
21	72.0	0.04	-1.15	-1.11
20	68.4	0.02	-1.09	-1.07
19	64.8	0.01	-1.03	-1.02
18	61.2	0.01	-0.97	-0.96
17	57.6	-0.01	-0.92	-0.93
16	54.0	-0.03	-0.86	-0.89
15	50.4	0.00	-0.80	-0.80
14	46.8	-0.01	-0.74	-0.75
13	43.2	-0.03	-0.69	-0.72
12	39.6	0.00	-0.63	-0.63
11	36.0	0.01	-0.57	-0.56
10	32.4	0.02	-0.52	-0.50
9	28.8	0.04	-0.46	-0.42
8	25.2	0.03	-0.40	-0.37
7	21.6	-0.01	-0.34	-0.35
6	18.0	0.02	-0.29	-0.27
5	14.4	0.02	-0.23	-0.21
4	10.8	0.03	-0.17	-0.14
3	7.2	0.04	-0.11	-0.07
2	3.6	0.04	-0.06	-0.02
1	0.0	0.00	0.00	0.00

Table 45.10: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2220+00, MSU St. 45

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	0.01	-2.63	-2.62
42	147.6	0.03	-2.57	-2.54
41	144.0	0.03	-2.51	-2.48
40	140.4	0.06	-2.45	-2.39
39	136.8	0.05	-2.38	-2.33
38	133.2	0.03	-2.32	-2.29
37	129.6	0.05	-2.26	-2.21
36	126.0	0.05	-2.20	-2.15
35	122.4	0.04	-2.13	-2.09
34	118.8	0.06	-2.07	-2.01
33	115.2	0.07	-2.01	-1.94
32	111.6	0.06	-1.94	-1.88
31	108.0	0.07	-1.88	-1.81
30	104.4	0.08	-1.82	-1.74
29	100.8	0.06	-1.76	-1.70
28	97.2	0.07	-1.69	-1.62
27	93.6	0.06	-1.63	-1.57
26	90.0	0.07	-1.57	-1.50
25	86.4	0.07	-1.51	-1.44
24	82.8	0.04	-1.44	-1.40
23	79.2	0.04	-1.38	-1.34
22	75.6	0.04	-1.32	-1.28
21	72.0	0.03	-1.25	-1.22
20	68.4	0.02	-1.19	-1.17
19	64.8	0.01	-1.13	-1.12
18	61.2	0.01	-1.07	-1.06
17	57.6	0.01	-1.00	-0.99
16	54.0	0.00	-0.94	-0.94
15	50.4	0.00	-0.88	-0.88
14	46.8	0.00	-0.82	-0.82
13	43.2	0.00	-0.75	-0.75
12	39.6	0.00	-0.69	-0.69
11	36.0	0.01	-0.63	-0.62
10	32.4	0.00	-0.56	-0.56
9	28.8	0.01	-0.50	-0.49
8	25.2	0.00	-0.44	-0.44
7	21.6	0.00	-0.38	-0.38
6	18.0	0.01	-0.31	-0.30
5	14.4	0.00	-0.25	-0.25
4	10.8	0.00	-0.19	-0.19
3	7.2	0.00	-0.13	-0.13
2	3.6	0.00	-0.06	-0.06
1	0.0	0.00	0.00	0.00

2226+00, MSU St. 46

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.01	-2.63	-2.64
42	147.6	0.07	-2.57	-2.50
41	144.0	0.00	-2.51	-2.51
40	140.4	0.00	-2.45	-2.45
39	136.8	0.02	-2.38	-2.36
38	133.2	0.03	-2.32	-2.29
37	129.6	0.03	-2.26	-2.23
36	126.0	0.04	-2.20	-2.16
35	122.4	0.05	-2.13	-2.08
34	118.8	0.05	-2.07	-2.02
33	115.2	0.08	-2.01	-1.93
32	111.6	0.08	-1.94	-1.86
31	108.0	0.09	-1.88	-1.79
30	104.4	0.09	-1.82	-1.73
29	100.8	0.10	-1.76	-1.66
28	97.2	0.10	-1.69	-1.59
27	93.6	0.11	-1.63	-1.52
26	90.0	0.10	-1.57	-1.47
25	86.4	0.10	-1.51	-1.41
24	82.8	0.09	-1.44	-1.35
23	79.2	0.06	-1.38	-1.32
22	75.6	0.07	-1.32	-1.25
21	72.0	0.05	-1.25	-1.20
20	68.4	0.05	-1.19	-1.14
19	64.8	0.04	-1.13	-1.09
18	61.2	0.01	-1.07	-1.06
17	57.6	0.03	-1.00	-0.97
16	54.0	0.02	-0.94	-0.92
15	50.4	0.01	-0.88	-0.87
14	46.8	0.03	-0.82	-0.79
13	43.2	0.01	-0.75	-0.74
12	39.6	0.01	-0.69	-0.68
11	36.0	0.03	-0.63	-0.60
10	32.4	0.01	-0.56	-0.55
9	28.8	0.00	-0.50	-0.50
8	25.2	0.02	-0.44	-0.42
7	21.6	0.02	-0.38	-0.36
6	18.0	0.04	-0.31	-0.27
5	14.4	0.06	-0.25	-0.19
4	10.8	0.06	-0.19	-0.13
3	7.2	0.04	-0.13	-0.09
2	3.6	0.04	-0.06	-0.02
1	0.0	0.00	0.00	0.00

Table 45.11: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2232+00, MSU St. 47

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.13	-2.63	-2.76
42	147.6	-0.06	-2.57	-2.63
41	144.0	-0.08	-2.51	-2.59
40	140.4	-0.05	-2.45	-2.50
39	136.8	-0.06	-2.38	-2.44
38	133.2	-0.06	-2.32	-2.38
37	129.6	-0.06	-2.26	-2.32
36	126.0	-0.07	-2.20	-2.27
35	122.4	-0.06	-2.13	-2.19
34	118.8	-0.06	-2.07	-2.13
33	115.2	-0.05	-2.01	-2.06
32	111.6	-0.04	-1.94	-1.98
31	108.0	-0.04	-1.88	-1.92
30	104.4	-0.07	-1.82	-1.89
29	100.8	-0.07	-1.76	-1.83
28	97.2	-0.08	-1.69	-1.77
27	93.6	-0.07	-1.63	-1.70
26	90.0	-0.05	-1.57	-1.62
25	86.4	-0.05	-1.51	-1.56
24	82.8	-0.06	-1.44	-1.50
23	79.2	-0.07	-1.38	-1.45
22	75.6	-0.09	-1.32	-1.41
21	72.0	-0.09	-1.25	-1.34
20	68.4	-0.09	-1.19	-1.28
19	64.8	-0.11	-1.13	-1.24
18	61.2	-0.11	-1.07	-1.18
17	57.6	-0.13	-1.00	-1.13
16	54.0	-0.12	-0.94	-1.06
15	50.4	-0.13	-0.88	-1.01
14	46.8	-0.11	-0.82	-0.93
13	43.2	-0.13	-0.75	-0.88
12	39.6	-0.12	-0.69	-0.81
11	36.0	-0.12	-0.63	-0.75
10	32.4	-0.11	-0.56	-0.67
9	28.8	-0.11	-0.50	-0.61
8	25.2	-0.10	-0.44	-0.54
7	21.6	-0.10	-0.38	-0.48
6	18.0	-0.08	-0.31	-0.39
5	14.4	-0.08	-0.25	-0.33
4	10.8	-0.06	-0.19	-0.25
3	7.2	-0.05	-0.13	-0.18
2	3.6	-0.04	-0.06	-0.10
1	0.0	0.00	0.00	0.00

2238+00, MSU St. 48

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.10	-2.63	-2.73
42	147.6	-0.02	-2.57	-2.59
41	144.0	-0.05	-2.51	-2.56
40	140.4	-0.04	-2.45	-2.49
39	136.8	-0.03	-2.38	-2.41
38	133.2	-0.03	-2.32	-2.35
37	129.6	-0.03	-2.26	-2.29
36	126.0	-0.03	-2.20	-2.23
35	122.4	-0.04	-2.13	-2.17
34	118.8	-0.04	-2.07	-2.11
33	115.2	-0.03	-2.01	-2.04
32	111.6	-0.03	-1.94	-1.97
31	108.0	-0.02	-1.88	-1.90
30	104.4	-0.02	-1.82	-1.84
29	100.8	-0.01	-1.76	-1.77
28	97.2	-0.01	-1.69	-1.70
27	93.6	0.00	-1.63	-1.63
26	90.0	0.00	-1.57	-1.57
25	86.4	-0.01	-1.51	-1.52
24	82.8	-0.02	-1.44	-1.46
23	79.2	0.00	-1.38	-1.38
22	75.6	0.00	-1.32	-1.32
21	72.0	-0.03	-1.25	-1.28
20	68.4	-0.02	-1.19	-1.21
19	64.8	-0.01	-1.13	-1.14
18	61.2	-0.03	-1.07	-1.10
17	57.6	-0.02	-1.00	-1.02
16	54.0	-0.04	-0.94	-0.98
15	50.4	-0.03	-0.88	-0.91
14	46.8	-0.02	-0.82	-0.84
13	43.2	0.00	-0.75	-0.75
12	39.6	0.00	-0.69	-0.69
11	36.0	0.04	-0.63	-0.59
10	32.4	0.03	-0.56	-0.53
9	28.8	0.03	-0.50	-0.47
8	25.2	0.03	-0.44	-0.41
7	21.6	0.04	-0.38	-0.34
6	18.0	0.03	-0.31	-0.28
5	14.4	0.05	-0.25	-0.20
4	10.8	0.06	-0.19	-0.13
3	7.2	0.04	-0.13	-0.09
2	3.6	0.00	-0.06	-0.06
1	0.0	0.00	0.00	0.00

Table 45.12: Coordinates of the Fifth Annual Post-Construction Pavement Profile of Eastbound Passing Lane

2244+00, MSU St. 49

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.23	-2.63	-2.86
42	147.6	-0.21	-2.57	-2.78
41	144.0	-0.20	-2.51	-2.71
40	140.4	-0.20	-2.45	-2.65
39	136.8	-0.20	-2.38	-2.58
38	133.2	-0.18	-2.32	-2.50
37	129.6	0.17	-2.26	-2.09
36	126.0	-0.17	-2.20	-2.37
35	122.4	-0.13	-2.13	-2.26
34	118.8	-0.12	-2.07	-2.19
33	115.2	-0.11	-2.01	-2.12
32	111.6	-0.09	-1.94	-2.03
31	108.0	-0.09	-1.88	-1.97
30	104.4	-0.09	-1.82	-1.91
29	100.8	-0.05	-1.76	-1.81
28	97.2	-0.05	-1.69	-1.74
27	93.6	-0.06	-1.63	-1.69
26	90.0	-0.06	-1.57	-1.63
25	86.4	-0.06	-1.51	-1.57
24	82.8	-0.08	-1.44	-1.52
23	79.2	-0.08	-1.38	-1.46
22	75.6	-0.08	-1.32	-1.40
21	72.0	-0.08	-1.25	-1.33
20	68.4	-0.05	-1.19	-1.24
19	64.8	-0.06	-1.13	-1.19
18	61.2	-0.06	-1.07	-1.13
17	57.6	-0.04	-1.00	-1.04
16	54.0	-0.03	-0.94	-0.97
15	50.4	-0.04	-0.88	-0.92
14	46.8	-0.05	-0.82	-0.87
13	43.2	-0.03	-0.75	-0.78
12	39.6	-0.03	-0.69	-0.72
11	36.0	-0.04	-0.63	-0.67
10	32.4	-0.03	-0.56	-0.59
9	28.8	-0.03	-0.50	-0.53
8	25.2	-0.02	-0.44	-0.46
7	21.6	-0.01	-0.38	-0.39
6	18.0	-0.03	-0.31	-0.34
5	14.4	-0.01	-0.25	-0.26
4	10.8	0.00	-0.19	-0.19
3	7.2	0.00	-0.13	-0.13
2	3.6	0.01	-0.06	-0.05
1	0.0	0.00	0.00	0.00

2250+00, MSU St. 50

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.22	-2.63	-2.85
42	147.6	-0.26	-2.57	-2.83
41	144.0	-0.23	-2.51	-2.74
40	140.4	-0.23	-2.45	-2.68
39	136.8	-0.25	-2.38	-2.63
38	133.2	-0.24	-2.32	-2.56
37	129.6	-0.23	-2.26	-2.49
36	126.0	-0.22	-2.20	-2.42
35	122.4	-0.20	-2.13	-2.33
34	118.8	-0.20	-2.07	-2.27
33	115.2	-0.20	-2.01	-2.21
32	111.6	-0.20	-1.94	-2.14
31	108.0	-0.19	-1.88	-2.07
30	104.4	-0.17	-1.82	-1.99
29	100.8	-0.18	-1.76	-1.94
28	97.2	-0.17	-1.69	-1.86
27	93.6	-0.16	-1.63	-1.79
26	90.0	-0.18	-1.57	-1.75
25	86.4	-0.20	-1.51	-1.71
24	82.8	-0.22	-1.44	-1.66
23	79.2	-0.23	-1.38	-1.61
22	75.6	-0.20	-1.32	-1.52
21	72.0	-0.21	-1.25	-1.46
20	68.4	-0.23	-1.19	-1.42
19	64.8	-0.23	-1.13	-1.36
18	61.2	-0.22	-1.07	-1.29
17	57.6	-0.21	-1.00	-1.21
16	54.0	-0.19	-0.94	-1.13
15	50.4	-0.19	-0.88	-1.07
14	46.8	-0.17	-0.82	-0.99
13	43.2	-0.13	-0.75	-0.88
12	39.6	-0.13	-0.69	-0.82
11	36.0	-0.12	-0.63	-0.75
10	32.4	-0.10	-0.56	-0.66
9	28.8	-0.11	-0.50	-0.61
8	25.2	-0.10	-0.44	-0.54
7	21.6	-0.09	-0.38	-0.47
6	18.0	-0.08	-0.31	-0.39
5	14.4	-0.07	-0.25	-0.32
4	10.8	-0.04	-0.19	-0.23
3	7.2	-0.03	-0.13	-0.16
2	3.6	0.00	-0.06	-0.06
1	0.0	0.00	0.00	0.00

Table 45.13: Coordinates of the Fifth Annual Post-Construction Pavement Profile of East Bound Passing Lane

2254+00, MSU St. 51

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.12	-2.41	-2.53
42	147.6	-0.13	-2.35	-2.48
41	144.0	-0.12	-2.30	-2.42
40	140.4	-0.14	-2.24	-2.38
39	136.8	-0.15	-2.18	-2.33
38	133.2	-0.13	-2.12	-2.25
37	129.6	-0.11	-2.07	-2.18
36	126.0	-0.10	-2.01	-2.11
35	122.4	-0.08	-1.95	-2.03
34	118.8	-0.07	-1.90	-1.97
33	115.2	-0.07	-1.84	-1.91
32	111.6	-0.06	-1.78	-1.84
31	108.0	-0.04	-1.72	-1.76
30	104.4	0.00	-1.67	-1.67
29	100.8	-0.02	-1.61	-1.63
28	97.2	-0.03	-1.55	-1.58
27	93.6	-0.06	-1.49	-1.55
26	90.0	-0.05	-1.44	-1.49
25	86.4	-0.07	-1.38	-1.45
24	82.8	-0.11	-1.32	-1.43
23	79.2	-0.10	-1.27	-1.37
22	75.6	-0.08	-1.21	-1.29
21	72.0	-0.11	-1.15	-1.26
20	68.4	-0.12	-1.09	-1.21
19	64.8	-0.11	-1.04	-1.15
18	61.2	-0.11	-0.98	-1.09
17	57.6	-0.11	-0.92	-1.03
16	54.0	-0.09	-0.86	-0.95
15	50.4	-0.09	-0.81	-0.90
14	46.8	-0.09	-0.75	-0.84
13	43.2	-0.07	-0.69	-0.76
12	39.6	-0.10	-0.64	-0.74
11	36.0	-0.10	-0.58	-0.68
10	32.4	-0.09	-0.52	-0.61
9	28.8	-0.08	-0.46	-0.54
8	25.2	-0.10	-0.41	-0.51
7	21.6	-0.07	-0.35	-0.42
6	18.0	-0.08	-0.29	-0.37
5	14.4	-0.08	-0.23	-0.31
4	10.8	-0.09	-0.17	-0.26
3	7.2	-0.06	-0.11	-0.17
2	3.6	0.03	-0.06	-0.03
1	0.0	0.00	0.00	0.00

2260+00, MSU St. 52

Point	Pavement Width (X)	Profilograph Coordinates	Profilograph Level (in)	Pavement Elevation(Y)
43	151.2	-0.12	-1.49	-1.61
42	147.6	-0.11	-1.45	-1.56
41	144.0	-0.10	-1.42	-1.52
40	140.4	-0.09	-1.38	-1.47
39	136.8	-0.09	-1.35	-1.44
38	133.2	-0.09	-1.31	-1.40
37	129.6	-0.05	-1.28	-1.33
36	126.0	-0.05	-1.24	-1.29
35	122.4	-0.03	-1.21	-1.24
34	118.8	-0.01	-1.17	-1.18
33	115.2	0.00	-1.13	-1.13
32	111.6	0.00	-1.10	-1.10
31	108.0	0.02	-1.06	-1.04
30	104.4	0.03	-1.03	-1.00
29	100.8	0.01	-0.99	-0.98
28	97.2	0.01	-0.96	-0.95
27	93.6	0.00	-0.92	-0.92
26	90.0	-0.02	-0.89	-0.91
25	86.4	-0.03	-0.85	-0.88
24	82.8	-0.03	-0.82	-0.85
23	79.2	-0.04	-0.78	-0.82
22	75.6	-0.04	-0.74	-0.78
21	72.0	-0.02	-0.71	-0.73
20	68.4	-0.03	-0.67	-0.70
19	64.8	-0.01	-0.64	-0.65
18	61.2	-0.05	-0.60	-0.65
17	57.6	-0.03	-0.57	-0.60
16	54.0	-0.04	-0.53	-0.57
15	50.4	-0.02	-0.50	-0.52
14	46.8	-0.01	-0.46	-0.47
13	43.2	-0.04	-0.43	-0.47
12	39.6	-0.01	-0.39	-0.40
11	36.0	-0.02	-0.35	-0.37
10	32.4	-0.03	-0.32	-0.35
9	28.8	-0.04	-0.28	-0.32
8	25.2	-0.04	-0.25	-0.29
7	21.6	-0.05	-0.21	-0.26
6	18.0	-0.02	-0.18	-0.20
5	14.4	-0.04	-0.14	-0.18
4	10.8	0.00	-0.11	-0.11
3	7.2	0.07	-0.07	-0.00
2	3.6	0.02	-0.04	-0.02
1	0.0	0.00	0.00	0.00

Table 46.1: Fifth Annual Post-Construction Rut Depth on Westbound Field Experimental Test Section.

MSU Station Number	Highway Station	Binder Used	West Bound Passing Lane (WBPL)			West Bound Driving Lane (WBDL)		
			Left Wheel Path (LWP) (in)	Right Wheel Path (RWP) (in)	Center (in)	Left Wheel Path (LWP) (in)	Right Wheel Path (RWP) (in)	Center (in)
1	2260+00	Polybilt	0.06	0.07	0.00	0.19	0.24	0.00
2	2254+00	Polybilt	0.09	0.07	0.00	0.22	0.20	0.00
3	2250+00	Polybilt	0.06	0.08	0.00	0.12	0.24	0.00
4	2244+00	Polybilt	0.07	0.09	0.00	0.20	0.17	0.00
5	2238+00	Polybilt	0.03	0.03	0.00	0.14	0.20	0.00
6	2232+00	Polybilt	0.05	0.08	0.00	0.12	0.14	0.00
7	2226+00	Polybilt	0.07	0.14	0.00	0.09	0.16	0.00
8	2220+00	Polybilt	0.04	0.10	0.00	0.12	0.14	0.00
9	2214+00	Polybilt	0.07	0.07	0.00	0.12	0.17	0.00
10	2208+00	Polybilt	0.08	0.15	0.00	0.13	0.15	0.00
11	2200+00	Exxon	0.08	0.09	0.00	0.53	0.57	0.00
12	2196+00	Exxon	0.08	0.13	0.00	0.59	0.60	0.00
13	2192+00	Exxon	0.12	0.20	0.00	0.56	0.57	0.00
14	2188+00	Exxon	0.09	0.10	0.00	0.54	0.50	0.00
15	2184+00	Exxon	0.14	0.15	0.00	0.49	0.53	0.00
16	2180+00	Exxon	0.09	0.10	0.00	0.45	0.51	0.00
17	2176+00	Exxon	0.15	0.13	0.00	0.41	0.54	0.00
18	2170+00	Kraton	0.09	0.16	0.00	0.18	0.20	0.00
19	2164+00	Kraton	0.07	0.10	0.00	0.17	0.21	0.00
20	2160+00	Kraton	0.06	0.13	0.00	0.11	0.18	0.00
21	2154+00	Kraton	0.10	0.08	0.00	0.17	0.13	0.00
22	2150+00	Kraton	0.04	0.03	0.00	0.11	0.12	0.00
23	2144+00	Kraton	0.07	0.13	0.00	0.09	0.18	0.00
24	2138+00	Kraton	0.05	0.09	0.00	0.11	0.10	0.00
25	2134+00	Kraton	0.06	0.08	0.00	0.10	0.10	0.00
26	2130+00	Kraton	0.07	0.07	0.00	0.08	0.09	0.00
Average Rut Depth			0.08	0.10	0.00	0.24	0.27	0.00
Standard Deviation			0.03	0.04	0.00	0.18	0.18	0.00
Maximum Rut Depth			0.15	0.20	0.00	0.59	0.60	0.00
Minimum Rut Depth			0.03	0.03	0.00	0.08	0.09	0.00

Statistics of Rut Depth by Section of Modified Binder Used on West Bound Passing and Driving Lanes

Statistics of Rut Depth on LWP of WBPL						Statistics of Rut Depth on RWP of WBPL					
Binder	Average	Maximum	Minimum	Std. Dev.	Variance	Binder	Average	Maximu	Minimum	Std. Dev.	Variance
Polybilt	0.06	0.09	0.03	0.018	0.00033	Polybilt	0.09	0.15	0.03	0.035	0.00124
Kraton	0.07	0.10	0.04	0.019	0.00034	Kraton	0.10	0.16	0.03	0.039	0.00150
Exxon	0.11	0.15	0.08	0.029	0.00086	Exxon	0.13	0.20	0.09	0.038	0.00145

Statistics of Rut Depth on LWP of WBDL						Statistics of Rut Depth on RWP of WBDL					
Binder	Average	Maximum	Minimum	Std. Dev.	Variance	Binder	Average	Maximu	Minimum	Std. Dev.	Variance
Polybilt	0.15	0.22	0.09	0.043	0.00183	Polybilt	0.18	0.24	0.14	0.038	0.00141
Kraton	0.12	0.18	0.08	0.038	0.00145	Kraton	0.15	0.21	0.09	0.047	0.00220
Exxon	0.51	0.59	0.41	0.064	0.00403	Exxon	0.55	0.60	0.50	0.036	0.00130

Table 46.2: Fifth Annual Post-Construction Rut Depth on Eastbound Field Experimental Test Section.

MSU Station Number	Highway Station	Binder Used	East Bound Passing Lane (EBPL)			East Bound Driving Lane (EBDL)		
			Left Wheel Path (LWP) (in)	Right Wheel Path (RWP) (in)	Center (in)	Left Wheel Path (LWP) (in)	Right Wheel Path (RWP) (in)	Center (in)
27	2130+00	Polybilt	0.11	0.08	0.00	0.21	0.18	0.00
28	2134+00	Polybilt	0.05	0.05	0.00	0.17	0.17	0.00
29	2138+00	Polybilt	0.07	0.08	0.00	0.19	0.17	0.00
30	2144+00	Polybilt	0.08	0.08	0.00	0.20	0.19	0.00
31	2150+00	Polybilt	0.07	0.08	0.00	0.17	0.30	0.00
32	2154+00	Polybilt	0.08	0.07	0.00	0.17	0.16	0.00
33	2160+00	Polybilt	0.08	0.09	0.00	0.10	0.15	0.00
34	2164+00	Polybilt	0.11	0.12	0.00	0.19	0.17	0.00
35	2170+00	Polybilt	0.07	0.09	0.00	0.10	0.12	0.00
36	2176+00	Exxon	0.06	0.06	0.00	0.25	0.30	0.00
37	2180+00	Exxon	0.09	0.05	0.00	0.49	0.49	0.00
38	2184+00	Exxon	0.09	0.09	0.00	0.50	0.56	0.00
39	2188+00	Exxon	0.12	0.09	0.00	0.54	0.61	0.00
40	2192+00	Exxon	0.11	0.08	0.00	0.51	0.51	0.00
41	2196+00	Exxon	0.13	0.06	0.00	0.68	0.63	0.00
42	2200+00	Exxon	0.12	0.12	0.00	0.64	0.63	0.00
43	2208+00	Kraton	0.07	0.04	0.00	0.12	0.13	0.00
44	2214+00	Kraton	0.08	0.08	0.00	0.20	0.19	0.00
45	2220+00	Kraton	0.06	0.04	0.00	0.18	0.19	0.00
46	2226+00	Kraton	0.06	0.04	0.00	0.21	0.19	0.00
47	2232+00	Kraton	0.09	0.02	0.00	0.16	0.16	0.00
48	2238+00	Kraton	0.07	0.04	0.00	0.19	0.13	0.00
49	2244+00	Kraton	0.03	0.06	0.00	0.17	0.18	0.00
50	2250+00	Kraton	0.10	0.07	0.00	0.18	0.15	0.00
51	2254+00	Kraton	0.08	0.09	0.00	0.15	0.18	0.00
52	2260+00	Kraton	0.08	0.06	0.00	0.20	0.21	0.00
Overall Average Rut Depth			0.08	0.07	0.00	0.26	0.27	0.00
Overall Standard Deviation			0.02	0.02	0.00	0.17	0.17	0.00
Overall Maximum Rut Depth			0.13	0.12	0.00	0.68	0.63	0.00
Overall Minimum Rut Depth			0.03	0.02	0.00	0.10	0.12	0.00

Statistics of Rut Depth by Section of Modified Binder Used on East Bound Passing and Driving Lanes

Statistics of Rut Depth on LWP of EBPL						Statistics of Rut Depth on RWP of EBPL					
Binder	Average	Maximum	Minimum	Std. Dev.	Variance	Binder	Average	Maximum	Minimum	Std. Dev.	Variance
Polybilt	0.08	0.11	0.05	0.019	0.00038	Polybilt	0.08	0.12	0.05	0.019	0.00034
Kraton	0.07	0.10	0.03	0.019	0.00037	Kraton	0.05	0.09	0.02	0.022	0.00047
Exxon	0.10	0.13	0.06	0.024	0.00059	Exxon	0.08	0.12	0.05	0.024	0.00058

Statistics of Rut Depth on LWP of EBDL						Statistics of Rut Depth on RWP of EBDL					
Binder	Average	Maximum	Minimum	Std. Dev.	Variance	Binder	Average	Maximum	Minimum	Std. Dev.	Variance
Polybilt	0.17	0.21	0.10	0.040	0.00163	Polybilt	0.18	0.30	0.12	0.050	0.00246
Kraton	0.18	0.21	0.12	0.027	0.00074	Kraton	0.17	0.21	0.13	0.027	0.00074
Exxon	0.52	0.68	0.25	0.138	0.01910	Exxon	0.53	0.63	0.30	0.117	0.01369

Table 47.1: Fifth Annual Statistics of the Transverse Cracks
West and East Bound Lanes
Total

	Westbound Lane		Eastbound Lane		Total	
Severity Level	Number of Cracks	Percentage	Number of Cracks	Percentage	Number of Cracks	Percentage
Low	184	58.8	196	72.6	380	65.2
Medium	64	20.4	12	4.4	76	13.0
High	21	6.7	1	0.4	22	3.8
Crack Sealed	42	13.4	60	22.2	102	17.5
Not Recorded	2	0.6	1	0.4	3	0.5
Total	313		270		583	

	Total	
Length of Cracks	Number of Cracks	Percentage
Full Width	317	54.4
Shoulder	73	12.5
1/2 Sh	1	0.2
Sh + DL	10	1.7
Sh +1/2DL	21	3.6
Sh + 1/4DL	25	4.3
Sh + 1/8DL	29	5.0
PL + DL	2	0.3
PL	6	1.0
PL + 1/2 DL	2	0.3
PL + 3/4 DL	1	0.2
3/4 DL	1	0.2
1/2 DL	4	0.7
1/4 DL	4	0.7
1/8 DL	1	0.2
Sh + 3/4 DL	1	0.2
Sh + 1/10 DL	1	0.2
Longitudinal	42	7.2
Edge	42	7.2

Table 47.2: Fifth Annual Statistics of the Transverse Cracks
West and East Bound Lanes
Control Section

	Westbound Lane		Eastbound Lane		Total	
Severity Level	Number of Cracks	Percentage	Number of Cracks	Percentage	Number of Cracks	Percentage
Low	98	81.7	77	93.9	175	86.6
Medium	20	16.7	4	4.9	24	11.9
High	2	1.7	1	1.2	3	1.5
Crack Sealed	0	0.0	0	0.0	0	0.0
Not Recorded	0	0.0	0	0.0	0	0.0
Total	120		82		202	

	Total in Control Section	
Length of Cracks	Number of Cracks	Percentage
Full Width	99	17.0
Shoulder	37	6.3
Sh+DL	8	1.4
Sh +1/2DL	10	1.7
Sh + 1/4DL	14	2.4
Sh + 1/8DL	15	2.6
PL + DL	1	0.2
PL	3	0.5
PL + 3/4DL	1	0.2
1/2 DL	3	0.5
1/2Sh	1	0.2
Longitudinal	2	0.3
Edge	8	1.4

Table 47.3: Fifth Annual Statistics of the Transverse Cracks
West and East Bound Lanes
Polybilt Modified

	Westbound Lane		Eastbound Lane		Total	
Severity Level	Number of Cracks	Percentage	Number of Cracks	Percentage	Number of Cracks	Percentage
Low	61	52.6	38	35.5	99	44.4
Medium	34	29.3	8	7.5	42	18.8
High	19	16.4	0	0.0	19	8.5
Crack Sealed	0	0.0	60	56.1	60	26.9
Not Recorded	2	1.7	1	0.9	3	1.3
Total	116		107		223	

	Total in Polybilt Section	
Length of Cracks	Number of Cracks	Percentage
Full Width	109	48.9
Shoulder	15	6.7
Sh+DL	1	0.4
Sh +1/2DL	6	2.7
Sh + 1/4DL	7	3.1
Sh + 1/8DL	9	4.0
PL + DL	1	0.4
PL	1	0.4
PL + 1/2 DL	2	0.9
1/4 DL	4	1.8
3/4 DL	1	0.4
1/2 DL	1	0.4
1/8 DL	1	0.4
Sh+3/4 DL	1	0.4
Sh+1/10 DL	1	0.4
Longitudinal	30	13.5
Edge	33	14.8

Table 47.4: Fifth Annual Statistics of the Transverse Cracks
West and East Bound Lanes
Kraton Modified

	Westbound Lanes		Eastbound Lanes		Total	
Severity Level	Number of Cracks	Percentage	Number of Cracks	Percentage	Number of Cracks	Percentage
Low	25	32.5	81	100.0	106	67.1
Medium	10	13.0	0	0.0	10	6.3
High	0	0.0	0	0.0	0	0.0
Crack Sealed	42	54.5	0	0.0	42	26.6
Not Recorded	0	0.0	0	0.0	0	0.0
Total	77		81		158	

	Total in Kraton Section	
Length of Cracks	Number of Cracks	Percentage
Full Width	109	69.0
Shoulder	21	13.3
Sh+DL	1	0.6
Sh +1/2DL	5	3.2
Sh + 1/4DL	4	2.5
Sh + 1/8DL	5	3.2
PL	2	1.3
Longitudinal	10	6.3
Edge	1	0.6

Table 47.5: Fifth Annual Crack Statistics per Station
Westbound and Eastbound Lanes
Total

	Westbound Lane		Eastbound Lane		Total	
Severity Level	Number of Cracks	Cracks per Station	Number of Cracks	Cracks per Station	Number of Cracks	Cracks per Station
Low	184	7.1	196	7.5	380	7.3
Medium	64	2.5	12	0.5	76	1.5
High	21	0.8	1	0.0	22	0.4
Crack Sealed	42	1.6	60	2.3	102	2.0
Not Recorded	2	0.1	1	0.0	3	0.1
Total	313	12.0	270	10.4	583	11.2

West and East Bound Lanes
Control Section

	Westbound Lane		Eastbound Lane		Total	
Severity Level	Number of Cracks	Cracks per Station	Number of Cracks	Cracks per Station	Number of Cracks	Cracks per Station
Low	98	14.0	77	11.0	175	12.5
Medium	20	2.9	4	0.6	24	1.7
High	2	0.3	1	0.1	3	0.2
Crack Sealed	0	0.0	0	0.0	0	0.0
Not Recorded	0	0.0	0	0.0	0	0.0
Total	120	17.1	82	11.7	202	14.4

West and East Bound Lanes
Polybilt Modified

	Westbound Lane		Eastbound Lane		Total	
Severity Level	Number of Cracks	Cracks per Station	Number of Cracks	Cracks per Station	Number of Cracks	Cracks per Station
Low	61	6.1	38	4.2	99	5.2
Medium	34	3.4	8	0.9	42	2.2
High	19	1.9	0	0.0	19	1.0
Crack Sealed	0	0.0	60	6.7	60	3.2
Not Recorded	2	0.2	1	0.1	3	0.2
Total	116	11.6	107	11.9	223	11.7

West and East Bound Lanes
Kraton Modified

	Westbound Lanes		Eastbound Lanes		Total	
Severity Level	Number of Cracks	Cracks per Station	Number of Cracks	Cracks per Station	Number of Cracks	Cracks per Station
Low	25	2.8	81	8.1	106	5.6
Medium	10	1.1	0	0.0	10	0.5
High	0	0.0	0	0.0	0	0.0
Crack Sealed	42	4.7	0	0.0	42	2.2
Not Recorded	0	0.0	0	0.0	0	0.0
Total	77	8.6	81	8.1	158	8.3

Table 48.1: Fifth Annual Pavement Surface Condition
Cracking - Polybilt West Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
1	2260+00		21.6	Moderate	Sh+DL	
1	2260+00		151.6	High	Full Width	
1	2260+00		52.6	High	Full Width	
1	2260+00	26.3		Low	1/2 DL+PL	
1	2260+00	51.8		Moderate	Full Width	
1	2260+00	2.5		High	Full Width	
1	2260+00	122		Low	1/4 DL	
1	2260+00	135		Low	1/2 DL	
1	2260+00	93.2		Moderate	Full Width	
1	2260+00	188		High	Full Width	
1	2260+00	52		Moderate	0-52 FT.	Logitudinal
2	2254+00	9		Moderate	Full Width	
2	2254+00	104.1		High	Full Width	
2	2254+00	17		Low	17-96 FT.	Edge
2	2254+00	173		Moderate	Full Width	
2	2254+00	185		Not Recorded	185-200 FT.	Edge
2	2254+00	0		Low	0-200 FT.	Logitudinal
2	2254+00		29.7	High	Full Width	
2	2254+00		88.6	Low	Sh+1/2 DL	
2	2254+00		122.2	Moderate	Full Width	
2	2254+00		144.4	Low	Sh+1/8DL	
2	2254+00		182.9	High	Full Width	
2	2254+00		38	High	38-62 FT.	Edge
2	2254+00		71	Low	1/8 DL	
2	2254+00		85	Moderate	85-107 FT.	Edge
2	2254+00		175	Moderate	175-200 FT.	Edge
3	2250+00	42.2		High	Full Width	
3	2250+00	111.5		Moderate	Full Width	
3	2250+00	153		Low	Shoulder	
3	2250+00	182		High	Full Width	
3	2250+00	0		Low	0-200 FT.	Edge
3	2250+00		45	Moderate	Full Width	
3	2250+00		115	High	Full Width	
3	2250+00		115	Low	115-200 FT.	Edge
3	2250+00		180	High	Full Width	

Table 48.2: Fifth Annual Pavement Surface Condition
Cracking - Polybilt West Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
4	2244+00	10.5		High	Full Width	
4	2244+00	36.3		Low	Sh+1/2DL	
4	2244+00	69		Low	Sh+1/2DL	
4	2244+00	145.4		Moderate	Full Width	
4	2244+00	98		Low	98-121 FT.	Edge, Patch
4	2244+00		37.6	Low	Sh+1/2DL	
4	2244+00		87.5	Moderate	Full Width	
4	2244+00		165.9	Moderate	Full Width	
4	2244+00		26	Low	Shoulder	
4	2244+00		126	Low	Shoulder	
4	2244+00		151	Low	Shoulder	
4	2244+00		200	Low	Sh+1/8DL	
5	2238+00	22.6		Moderate	Full Width	
5	2238+00	78		High	Full Width	
5	2238+00	106.9		Low	Full Width	
5	2238+00	166		High	Full Width	
5	2238+00	0		Low	0-200 FT.	Longitudinal
5	2238+00		63.3	High	Full Width	
5	2238+00		153.3	High	Full Width	
5	2238+00		0	Low	0-200 FT.	Longitudinal
6	2232+00	15.7		Low	Full Width	
6	2232+00	82.5		Low	Full Width	
6	2232+00	135		Low	Full Width	
6	2232+00	197.8		Low	Full Width	
6	2232+00	0		Low	0-134 FT.	Longitudinal
6	2232+00	41		Low	41-66 FT.	Edge
6	2232+00	118		Low	118-190 FT.	Edge
6	2232+00		40.7	Low	Sh+1/2DL	
6	2232+00		69.3	Low	Full Width	
6	2232+00		104.9	Low	Sh+1/8DL	
6	2232+00		132.7	Moderate	Full Width	
6	2232+00		161.2	Low	Full Width	
6	2232+00		0	Low	0-133 FT.	Longitudinal

Table 48.3: Fifth Annual Pavement Surface Condition
Cracking - Polybilt West Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
7	2226+00	54.8		High	Full Width	
7	2226+00	115.7		Low	Sh+1/8DL	
7	2226+00	171.1		Moderate	Full Width	
7	2226+00	0.5		Low	Full Width	
7	2226+00	0				Longitudinal
7	2226+00	174		Low	174-194 FT.	Edge
7	2226+00		37	Moderate	Full Width	
7	2226+00		73.4	Low	Full Width	
7	2226+00		0	Low	0-200 FT.	Longitudinal
7	2226+00		50	Low	50-121 FT.	Edge
7	2226+00		129	Low	3/4DL	
7	2226+00		167	Low	167-200 FT.	Edge
8	2220+00	15.5		Moderate	Full Width	
8	2220+00	71.9		Low	Full Width	
8	2220+00	110.1		Low	Full Width	
8	2220+00	33		Low	Shoulder	
8	2220+00	184		Low	Full Width	
8	2220+00		105	Moderate	Full Width	
8	2220+00		0	Low	0-200 FT.	Longitudinal
8	2220+00		188	High	Full Width	
9	2214+00	42.3		Moderate	Full Width	
9	2214+00	67.2		Low	1/2DL+PL	
9	2214+00	200.2		Moderate	Full Width	
9	2214+00	105.7		Moderate	Full Width	
9	2214+00	0		Low	0-200 FT.	Longitudinal
9	2214+00		27.7	Moderate	1/4DL	
9	2214+00		78.4	Moderate	Full Width	
9	2214+00		108.8	Low	1/4DL	
9	2214+00		152.3	Moderate	Full Width	
9	2214+00		179.9	Moderate	Full Width	
9	2214+00		0	Low	0-200 FT	Longitudinal
9	2214+00		109	Low	1/4DL	
9	2214+00		181	Moderate	Full Length	

Table 48.4: Fifth Annual Pavement Surface Condition
Cracking - Polybilt West Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
10	2208+00	34.2		Moderate	Full Width	
10	2208+00	138.2		Low	Full Width	
10	2208+00	96.6		Moderate	Full Width	
10	2208+00	9		Low	Shoulder	
10	2208+00	9		Low	9-200 FT.	Longitudinal
10	2208+00	77		Low	Sh+1/8DL	
10	2208+00	157		Low	Shoulder	
10	2208+00	182		Low	Full Width	
10	2208+00		22.6	Moderate	Full Width	
10	2208+00		119.2	Moderate	Full Width	
10	2208+00		186.9	Moderate	Full Width	
10	2208+00		153.2	Low	Shoulder	
10	2208+00		80	Moderate	80-188 FT.	Longitudinal
10	2208+00		53	Low	Shoulder	
10	2208+00		84	Low	Full Width	

Table 48.5: Fifth Annual Pavement Surface Condition
Cracking - Exxon West Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
11	2200+00	17		Low	Sh+1/8DL	
11	2200+00	52.2		Low	Full Width	CNWP*
11	2200+00	98		Low	Full Width	CNWP
11	2200+00	154.7		Moderate	Full Width	CNWP
11	2200+00	186.6		Low	1/2DL	
11	2200+00		5.2	Low	Full Width	
11	2200+00		46.6	Moderate	Full Width	CNWP
11	2200+00		147.9	Low	Full Width	CNWP
11	2200+00		169.8	Low	Full Width	CNWP
11	2200+00		0	Low	0-200	Longitudinal
11	2200+00		62	Low	1/2 DL	
11	2200+00		74	Low	Shoulder	
11	2200+00		126	High	Full Width	CNWP
12	2196+00	19.5		Moderate	Full Width	CNWP
12	2196+00	87.9		Moderate	Sh+1/8DL	
12	2196+00	122		Moderate	Full Width	CNWP
12	2196+00	192		Moderate	Sh+1/8DL	
12	2196+00	76		Low	Passing Lane	
12	2196+00	45		Low	Shoulder	
12	2196+00		90.9	Moderate	Full Width	
12	2196+00		124	Low	Shoulder	
12	2196+00		154.5	Low	Full Width	CNWP
12	2196+00		5	Low	Shoulder	
12	2196+00		32	Low	Full Width	
12	2196+00		129	Low	129-142 FT.	Edge
13	2192+00	3.3		Low	Full Width	
13	2192+00	67.2		Low	Shoulder	
13	2192+00	86.5		Moderate	Full Width	
13	2192+00	167.1		Low	Sh+DL	
13	2192+00	185.9		Moderate	Full Width	
13	2192+00	68		Low	Shoulder	
13	2192+00		33.7	Low	Sh+1/8 DL	
13	2192+00		48.2	Low	Full Width	
13	2192+00		65.5	Low	Sh+1/8 DL	
13	2192+00		105	Low	Sh+DL	
13	2192+00		134.3	Low	Full Width	
13	2192+00		175.7	Low	Shoulder	
13	2192+00		187.7	Low	Full Width	
13	2192+00		157	Low	Sh+1/8 DL	
13	2192+00		13	Low	1/2 Sh	
13	2192+00		93	Low	Sh+1/8 DL	
13	2192+00	29		Low	Full Width	
13	2192+00	123		Low	Full Width	
13	2192+00	168		Low	168-193 FT.	Edge

*CNWP - Cracks Not in Wheel Pathes Driving Lane

Table 48.6: Fifth Annual Pavement Surface Condition
Cracking - Exxon West Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
14	2188+00	53.1		Low	Full Width	
14	2188+00	116.5		Moderate	Full Width	
14	2188+00	138.4		Low	Sh+1/4 DL	
14	2188+00	158.5		Low	Full Width	
14	2188+00	173		Low	Shoulder	
14	2188+00	32		Low	Full Width	
14	2188+00	88		Low	Sh+1/4 DL	
14	2188+00	148		Moderate	Passing Lane	
14	2188+00		48.3	Low	Full Width	
14	2188+00		85.7	Low	Full Width	
14	2188+00		102.3	Low	Full Width	
14	2188+00		141.4	Low	Full Width	
14	2188+00		160.7	Low	Sh+1/2 DL	
14	2188+00		178.3	Low	Full Width	
14	2188+00		200	Low	Shoulder	
14	2188+00		6	Low	Full Width	
14	2188+00		19	Low	Shoulder	
14	2188+00		34	Low	Sh+1/8 DL	
14	2188+00		64	Low	Sh+1/4 DL	
15	2184+00	27.7		Low	Sh+DL	
15	2184+00	47.5		Low	Shoulder	
15	2184+00	95.1		Low	Full Width	
15	2184+00	148.2		Moderate	Full Width	
15	2184+00	200		Moderate	Sh+DL	
15	2184+00	188		Low	Shoulder	
15	2184+00	166		Low	Sh+1/8 DL	
15	2184+00	125		Low	Sh+1/8 DL	
15	2184+00	113		Low	Shoulder	
15	2184+00	98		Low	Passing Lane	
15	2184+00	73		Low	Shoulder	
15	2184+00	66		Low	PL+DL	
15	2184+00	17		Moderate	Full Width	
15	2184+00		12.6	Low	Full Width	
15	2184+00		135.2	Low	Full Width	
15	2184+00		181.8	Moderate	Full Width	
15	2184+00		148	Low	Shoulder	
15	2184+00		112	Low	Sh+1/2 DL	
15	2184+00		108	Moderate	Full Width	
15	2184+00		88	Low	Full Width	
15	2184+00		59	Low	Full Width	
15	2184+00		35	Low	Full Width	

Table 48.7: Fifth Annual Pavement Surface Condition
Cracking - Exxon West Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
16	2180+00	59.1		Low	Full Width	
16	2180+00	89.4		Low	Full Width	
16	2180+00	142.2		Low	Full Width	
16	2180+00	196.3		Moderate	Full Width	
16	2180+00	160		Low	Shoulder	
16	2180+00	118		Low	Shoulder	
16	2180+00	100		Low	100-182 FT.	Edge
16	2180+00	32		Low	32-45 FT.	Edge
16	2180+00	32		Low	Sh+1/4 DL	
16	2180+00	20		Low	Sh+1/2 DL	
16	2180+00	6		Low	Sh+1/2 DL	
16	2180+00		13.5	Low	Full Width	
16	2180+00		77.9	Low	Sh+DL	
16	2180+00		98.4	Low	Sh+1/4 DL	
16	2180+00		93	Low	Full Width	
16	2180+00		127	Moderate	Full Width	
16	2180+00		154.5	Low	Full Width	
16	2180+00		183	Low	Sh+1/2 DL	
16	2180+00		61	Low	Shoulder	
16	2180+00		42	Low	Sh+1/8 DL	
17	2176+00	57.2		High	Full Width	
17	2176+00	128		Low	Full Width	
17	2176+00	182		Low	Shoulder	
17	2176+00	92		Low	Shoulder	
17	2176+00	73		Low	Shoulder	
17	2176+00	27		Low	Sh+1/8 DL	
17	2176+00		20.5	Moderate	Full Width	
17	2176+00		95.7	Moderate	Full Width	
17	2176+00		167	Low	Sh+DL	
17	2176+00		147	Low	Sh+DL	
17	2176+00		136	Low	Shoulder	
17	2176+00		125	Low	Sh+1/8 DL	
17	2176+00		112	Low	Shoulder	
17	2176+00		100	Low	100-200 FT.	Edge
17	2176+00		50	Low	Shoulder	

Table 48.8: Fifth Annual Pavement Surface Condition
Cracking - Kraton West Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
18	2170+00	87		Moderate	Full Width	Visually
18	2170+00	3.5		Moderate	Full Width	Looks
18	2170+00	151		Moderate	Full Width	Good
18	2170+00	200		Low	Shoulder	
18	2170+00	191		Low	Shoulder	
18	2170+00	178		Low	Shoulder	
18	2170+00	112		Low	Shoulder	
18	2170+00	71		Low	Shoulder	
18	2170+00	61		Low	Sh+1/8 DL	
18	2170+00	44		Low	Full Width	
18	2170+00	20		Low	Shoulder	
18	2170+00		126	Low	Full Width	
18	2170+00		172.6	Moderate	Full Width	
18	2170+00		6	Low	6-200 FT.	Longitudinal
19	2164+00	52.7		Low	Sh+1/2 DL	
19	2164+00	34.6		Moderate	Full Width	
19	2164+00	108.4		Low	Full Width	
19	2164+00	138.9		Low	Full Width	
19	2164+00	161.2		Moderate	Full Width	
19	2164+00		7.6	Moderate	Full Width	
19	2164+00		33	Low	Shoulder	
19	2164+00		78.5	Moderate	Full Width	
19	2164+00		120.7	Low	Full Width	
20	2160+00	79.5		Low	Full Width	
20	2160+00	157		Low	Full Width	
20	2160+00	185		Low	Sh+1/2 DL	
20	2160+00		23.1	Low	Full Width	
20	2160+00		101.5	Moderate	Full Width	
20	2160+00		62.3	Low	Full Width	
20	2160+00		134.2	Low	Full Width	
20	2160+00		177.2	Low	Full Width	
21	2154+00	61		Crack Sealed	Full Width	
21	2154+00	180.2		Crack Sealed	Full Width	
21	2154+00	0		Crack Sealed	0-200 FT.	Longitudinal
21	2154+00		16.6	Moderate	Full Width	
21	2154+00		162	Low	Shoulder	
21	2154+00		0	Crack Sealed	0-200 FT.	Longitudinal

Table 48.9: Fifth Annual Pavement Surface Condition
Cracking - Kraton West Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
22	2150+00	74.6		Crack Sealed	Full Width	
22	2150+00	137.5		Crack Sealed	Full Width	
22	2150+00		18	Crack Sealed	Full Width	
22	2150+00		104.2	Crack Sealed	Full Width	
22	2150+00		203	Crack Sealed	Full Width	
22	2150+00		105	Crack Sealed	105-200 FT.	Longitudinal
23	2144+00	23.5		Crack Sealed	Full Width	
23	2144+00	124.1		Crack Sealed	Full Width	
23	2144+00		99.8	Crack Sealed	Full Width	
23	2144+00		0	Crack Sealed	0-200 FT.	Longitudinal
24	2138+00	4.7		Crack Sealed	Full Width	
24	2138+00	49.5		Crack Sealed	Full Width	
24	2138+00	100.2		Crack Sealed	Full Width	
24	2138+00	142.3		Crack Sealed	Full Width	
24	2138+00	200.7		Crack Sealed	Shoulder	
24	2138+00	100		Low	100-108 FT.	Edge
24	2138+00	0		Crack Sealed	0-200 FT.	Longitudinal
24	2138+00		30.5	Crack Sealed	Full Width	
24	2138+00		140.3	Crack Sealed	Full Width	
24	2138+00		199	Low	Shoulder	
24	2138+00		0	Crack Sealed	0-200 FT.	Longitudinal
25	2134+00	61.4		Crack Sealed	Full Width	
25	2134+00	100.5		Crack Sealed	Full Width	
25	2134+00	115		Crack Sealed	Full Width	
25	2134+00	9		Crack Sealed	Full Width	
25	2134+00	0		Crack Sealed	0-200 FT.	Longitudinal
25	2134+00		79.7	Crack Sealed	Full Width	
25	2134+00		173.2	Crack Sealed	Full Width	
25	2134+00		55	Crack Sealed	Full Width	
25	2134+00		64	Crack Sealed	64-80 FT.	
25	2134+00		197	Crack Sealed	Full Width	
25	2134+00		0	Crack Sealed	0-200 FT.	Longitudinal
26	2130+00	37.3		Crack Sealed	Full Width	
26	2130+00	50		Crack Sealed	Sh+1/2DL	
26	2130+00		18.3	Crack Sealed	Full Width	
26	2130+00		47.5	Crack Sealed	Full Width	
26	2130+00		157	Crack Sealed	Shoulder	
26	2130+00		176	Crack Sealed	Full Width	
26	2130+00		0	Crack Sealed	0-200 FT.	Off and On

Table 48.10 Fifth Annual Pavement Surface Condition
Cracking - Polybilt East Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
27	2130+00		38.2	Crack Sealed	Shoulder	
27	2130+00		154.2	Crack Sealed	Full Width	
27	2130+00		44	Crack Sealed	Full Width	
27	2130+00		62	Crack Sealed	Shoulder	
27	2130+00	30.5		Crack Sealed	Full Width	
27	2130+00	127.2		Crack Sealed	Full Width	
27	2130+00	98		Low	98-112 FT.	Edge
27	2130+00	145		Crack Sealed	145-163FT.	Edge
28	2134+00		13.4	Crack Sealed	Shoulder	
28	2134+00		15	Low	15-57 FT.	Edge
28	2134+00		39	Crack Sealed	Shoulder	
28	2134+00		110.5	Crack Sealed	Full Width	
28	2134+00		142.6	Crack Sealed	Sh+1/8 DL	
28	2134+00		33	Crack Sealed	Full Width	
28	2134+00	97.7		Crack Sealed	Full Width	
28	2134+00	193.9		Crack Sealed	DL+PL	
28	2134+00	196			196-200 FT.	Edge
29	2138+00		6	Crack Sealed	Full Width	
29	2138+00		96.1	Crack Sealed	Full Width	
29	2138+00		191	Crack Sealed	Full Width	
29	2138+00		200	Crack Sealed	200-204 FT.	
29	2138+00	35.7		Crack Sealed	Sh+1/4 DL	
29	2138+00	181.2		Crack Sealed	Full Width	
30	2144+00		49.3	Crack Sealed	Full Width	
30	2144+00		140	Crack Sealed	Full Width	
30	2144+00		-1	Crack Sealed	-1-17 FT.	Edge
30	2144+00		85	Crack Sealed	Full Width	Ln, PL betwen WP
30	2144+00		199	Crack Sealed	Sh+1/2 DL	
30	2144+00	40.7		Crack Sealed	Full Width	
30	2144+00	145.8		Crack Sealed	Full Width	
30	2144+00	192.3		Crack Sealed	Shoulder	
30	2144+00	107		Crack Sealed	107-117 FT.	Edge
30	2144+00	122		Crack Sealed	122-137 FT.	Edge
30	2144+00	161		Crack Sealed	161-176 FT.	Edge
30	2144+00	199		Crack Sealed	199-207 FT.	DL between WP

Table 48.11: Fifth Annual Pavement Surface Condition
Cracking - Polybilt East Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
31	2150+00		24.5	Sealed Crack	Full Width	
31	2150+00		11	Sealed Crack	11-184	Edge
31	2150+00		82	Sealed Crack	Full Width	
31	2150+00		123.2	Sealed Crack	Full Width	
31	2150+00		101	Sealed Crack	101-138	Ln in PL Between WP
31	2150+00	16		Sealed Crack	Full Width	
31	2150+00	44.3		Sealed Crack	Sh+1/4 DL	
31	2150+00	97.2		Sealed Crack	Sh+1/4 DL	
31	2150+00	119.8		Sealed Crack	Full Width	
31	2150+00	144		Sealed Crack	Sh+1/8 DL	
31	2150+00	178.2		Sealed Crack	Full Width	
31	2150+00	4		Sealed Crack	4-16	Edge
31	2150+00	22		Sealed Crack	22-40	Edge
31	2150+00	144		Sealed Crack	114-158	Edge
32	2154+00	84.3		Sealed Crack	Sh+1/4 DL	
32	2154+00	120		Sealed Crack	Full Width	
32	2154+00	8		Low	8-9	Edge
32	2154+00	55		Low	Shoulder	
32	2154+00	198		Sealed Crack	Full Width	
32	2154+00	200		Sealed Crack	200-206	Edge
32	2154+00	85		Low	85-114	Ln Between WP in PL
32	2154+00		25.6	Sealed Crack	Full Width	
32	2154+00		108.3	Sealed Crack	Sh+1/4 DL	
32	2154+00		123.5	Sealed Crack	Full Width	
32	2154+00		179.2	Sealed Crack	Full Width	
32	2154+00		26	Sealed Crack	26-40	Edge
32	2154+00		70	Sealed Crack	Sh+3/4 DL	
32	2154+00		119	Sealed Crack	119-170	Ln Between WP in PL
33	2160+00	45.3		Low	Full Width	PL sealed
33	2160+00	82.3		Low	Full Width	
33	2160+00	147		Low	Full Width	
33	2160+00	34		Low	34-59	Edge
33	2160+00	38		Sealed Crack	38-59	Longitudinal
33	2160+00	102		Low	102-146	Longitudinal
33	2160+00		26.7	Low	Full Width	PL sealed
33	2160+00		68.2	Moderate	Full Width	PL sealed
33	2160+00		142.8	Sealed Crack	Full Width	
33	2160+00		155	Sealed Crack	155-218	Longuitudinal
33	2160+00		143	Low	143-150	Edge

Table 48.12: Fifth Annual Pavement Surface Condition
Cracking - Polybilt East Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
34	2164+00	44		Low	Full Width	
34	2164+00	118.2		Moderate	Full Width	
34	2164+00	194.8		Low	Full Width	
34	2164+00	12		Low	12-36	Longitudinal
34	2164+00	44		Low	44-117	Longitudinal
34	2164+00	61		Low	Sh+1/8 DL	
34	2164+00	157		Low	Sh+1/4 DL	
34	2164+00		0.4	Low	Full Width	
34	2164+00		47.6	Low	Full Width	
34	2164+00		90.4	Moderate	Full Width	
34	2164+00		118.5	Low	Full Width	
34	2164+00		146.1	Low	Sh+1/8 DL	
34	2164+00		182.8	Low	Full Width	
34	2164+00		0	Low	0-68	Longitudinal
34	2164+00		44	Low	44-46	Edge
34	2164+00		51	Low	51-55	Edge
34	2164+00		119	Low	119-161	Longitudinal
34	2164+00		161	Low	161-184	Longitudinal
34	2164+00		74	Low	Sh+1/10 DL	
35	2170+00	69.7		Moderate	Full Width	
35	2170+00	156.5		Low	Full Width	
35	2170+00	69		Moderate	Full Width	
35	2170+00	156		Moderate	Full Width	
35	2170+00	171		Low	171-186	Longitudinal
35	2170+00	0		Low	0-11	Edge
35	2170+00		60.8	Moderate	Full Width	
35	2170+00		113.8	Moderate	Full Width	
35	2170+00		189	Low	Full Width	
35	2170+00		113.8	Low	Sh+1/4 DL	
35	2170+00		0	Low	0-29	Edge
35	2170+00		80	Low	80-85	Longitudinal
35	2170+00		100	Low	100-124	Longitudinal
35	2170+00		137	Low	137-160	Longitudinal

Table 48.13: Fifth Annual Pavement Surface Condition
Cracking - Exxon East Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
36	2176+00		98	Low	Sh+1/8 DL	
36	2176+00		162.8	Low	Full Width	WP closed
36	2176+00	73.6		Low	Sh+1/2 DL	WP closed
36	2176+00	196.9		High	Full Width	
36	2176+00	101.4		Low	Full Width	WP closed
36	2176+00	38		Low	Full Width	
36	2176+00	153		Low	Shoulder	
36	2176+00	160		Low	160-170	Ln DL WP
37	2180+00	25.8		Low	Full Width	Bleed
37	2180+00	50.8		Low	Full Width	and
37	2180+00	72.7		Low	Sh+1/4 DL	Rut
37	2180+00	86.8		Low	Full Width	
37	2180+00	125.7		Low	Full Width	
37	2180+00	157		Moderate	Full Width	
37	2180+00	186		Low	Shoulder	
37	2180+00		8.7	Low	Full Width	
37	2180+00		47.7	Low	Full Width	
37	2180+00		122.8	Low	Sh+1/2DL	
37	2180+00		155.8	Low	Full Width	
38	2184+00	78.8		Low	Full Width	
38	2184+00	161.6		Moderate	Full Width	
38	2184+00	186.3		Low	Sh+1/4 DL	
38	2184+00	32		Low	Full Width	
38	2184+00	123		Low	Full Width	
38	2184+00		38	Low	Full Width	
38	2184+00		32.8	Low	Shoulder	
38	2184+00		70.7	Low	Full Width	
38	2184+00		93.8	Low	Shoulder	
38	2184+00		134.6	Low	Full Width	
38	2184+00		187.3	Low	Full Width	
38	2184+00		101	Low	Full Width	
38	2184+00		163	Low	Shoulder	

Table 48.14: Fifth Annual Pavement Surface Condition
Cracking - Exxon East Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
39	2188+00		100.7	Low	Full Width	
39	2188+00		134.8	Low	Full Width	
39	2188+00		9	Low	Shoulder	
39	2188+00		22	Low	Shoulder	
39	2188+00		31	Low	Sh+1/4 DL	
39	2188+00		78	Low	Sh+1/4 DL	
39	2188+00		156	Low	Shoulder	
39	2188+00		183	Low	Sh+1/2 DL	
39	2188+00	23		Low	Full Width	
39	2188+00	55.7		Low	Full Width	
39	2188+00	121.7		Low	Full Width	
39	2188+00	145.9		Low	Full Width	
39	2188+00	177.6		Low	Sh+1/2DL	
39	2188+00	132		Low	132-154	Edge
40	2192+00	42.1		Low	Full Width	
40	2192+00	62.3		Low	Full Width	
40	2192+00	84.2		Low	Full Width	
40	2192+00	146.7		Low	Full Width	
40	2192+00	173		Low	Shoulder	
40	2192+00	102		Low	Full Width	
40	2192+00	160		Low	160-182	Edge
40	2192+00	186		Low	Shoulder	
40	2192+00	4		Low	1/2 DL	
40	2192+00	120		Low	Sh+1/8 DL	
40	2192+00		2.5	Low	Sh+DL	
40	2192+00		101.6	Low	Full Width	
40	2192+00		144.8	Low	Full Width	
40	2192+00		181	Low	Full Width	

Table 48.15: Fifth Annual Pavement Surface Condition
Cracking - Exxon East Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
41	2196+00	9.3		Low	Full Width	
41	2196+00	50.5		Moderate	Full Width	
41	2196+00	144.2		Moderate	Full Width	
41	2196+00	92		Low	Sh+1/4 DL	
41	2196+00	108		Low	Sh+1/4 DL	
41	2196+00	164		Low	Shoulder	
41	2196+00		49.5	Low	Full Width	
41	2196+00		102.6	Low	Full Width	
41	2196+00		144	Low	Sh+1/4 DL	
41	2196+00		197.8	Low	Sh+1/4 DL	
41	2196+00		190	Low	PL+3/4DL	
41	2196+00		133	Low	Full Width	
41	2196+00		172	Low	Sh+1/4 DL	
42	2200+00	34		Low	Full Width	
42	2200+00	112		Low	Full Width	
42	2200+00	147.6		Low	Full Width	
42	2200+00	172.4		Low	Sh+1/2DL	
42	2200+00	36		Low	36-50	Edge
42	2200+00	89		Low	Shoulder	
42	2200+00		34.5	Low	Full Width	
42	2200+00		155.8	Low	Full Width	
42	2200+00		197	Low	Shoulder	

Table 48.16: Fifth Annual Pavement Surface Condition
Cracking - Kraton East Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
43	2208+00	38.6		Low	Full Width	
43	2208+00	89.4		Low	Full Width	
43	2208+00	131.5		Low	Full Width	
43	2208+00		16.4	Low	Sh+1/2 DL	
43	2208+00		48.8	Low	Full Width	
43	2208+00		101.7	Low	Full Width	
43	2208+00		183.8	Low	Full Width	
43	2208+00		80	Low	Shoulder	
44	2214+00	97.1		Low	Full Width	
44	2214+00	126.6		Low	Sh+1/4 DL	
44	2214+00	176.5		Low	Full Width	
44	2214+00		87.3	Low	Sh+1/8DL	
44	2214+00		115.4	Low	Full Width	
44	2214+00		165.9	Low	Full Width	
44	2214+00		1.3	Low	Full Width	
44	2214+00		43	Low	Full Width	
45	2220+00	39.4		Low	Full Width	
45	2220+00	114.1		Low	Full Width	
45	2220+00	195.3		Low	Full Width	
45	2220+00	159.6		Low	Full Width	
45	2220+00	8		Low	Sh+1/4 DL	
45	2220+00		63.8	Low	Full Width	
45	2220+00		115.6	Low	Full Width	
45	2220+00		197	Low	Full Width	
45	2220+00		23	Low	Shoulder	
46	2226+00	104.7		Low	Full Width	
46	2226+00	133.9		Low	Sh+1/2 DL	
46	2226+00	161		Low	Sh+1/4 DL	
46	2226+00	198.4		Low	Full Width	
46	2226+00		22.1	Low	Full Width	
46	2226+00		88.7	Low	Full Width	
46	2226+00		146.1	Low	Full Width	
46	2226+00		196.5	Low	Full Width	

Table 48.17: Fifth Annual Pavement Surface Condition
Cracking - Kraton East Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
47	2232+00	19.9		Low	Sh+1/2 DL	
47	2232+00	55.6		Low	Full Width	
47	2232+00	91.2		Low	Sh+1/8 DL	
47	2232+00		5	Low	Shoulder	
47	2232+00		9	Low	Shoulder	
47	2232+00		50	Low	Full Width	
47	2232+00		125.7	Low	Full Width	
47	2232+00		162.6	Low	Full Width	
47	2232+00		208	Low	Full Width	
48	2238+00	3		Low	Full Width	
48	2238+00	60.5		Low	Full Width	
48	2238+00	88.6		Low	Full Width	
48	2238+00	159.6		Low	Full Width	
48	2238+00	181.3		Low	Full Width	
48	2238+00		57.6	Low	Full Width	
48	2238+00		111.6	Low	Full Width	
48	2238+00		163.1	Low	Full Width	
48	2238+00		191.9	Low	Full Width	
49	2244+00	49.3		Low	Full Width	
49	2244+00	153.8		Low	Full Width	
49	2244+00	181		Low	Shoulder	
49	2244+00	124		Low	Sh+1/8 DL	
49	2244+00		74.6	Low	Full Width	
49	2244+00		112.5	Low	Full Width	
49	2244+00		153	Low	Sh+1/4 DL	
50	2250+00	145.6		Low	Full Width	
50	2250+00		9.7	Low	Full Width	
50	2250+00		128.6	Low	Full Width	
50	2250+00		147.7	Low	Sh+1/8 DL	

Table 48.18: Fifth Annual Pavement Surface Condition
Cracking - Kraton East Bound

MSU Station	Station	Distance from Station (ft)		Crack Severity	Length of Crack	Remark
		Ahead	Back			
51	2254+00	91.5		Low	Full Width	
51	2254+00	150.8		Low	Full Width	
51	2254+00	192.4		Low	PL	
51	2254+00	16		Low	Shoulder	
51	2254+00	33		Low	Shoulder	
51	2254+00	182		Low	Sh+DL	
51	2254+00		12.3	Low	Full Width	
51	2254+00		160	Low	PL	
51	2254+00		162	Low	Full Width	
51	2254+00		196	Low	Shoulder	
52	2260+00	16.2		Low	Full Width	
52	2260+00	71.6		Low	Full Width	
52	2260+00	110.4		Low	Full Width	
52	2260+00	173.8		Low	Full Width	
52	2260+00	198		Low	Shoulder	
52	2260+00		6.3	Low	Shoulder	
52	2260+00		60.6	Low	Full Width	
52	2260+00		104.6	Low	Full Width	
52	2260+00		181.8	Low	Full Width	

TABLE 49.1:
FIFTH ANNUAL LEVELING DATA-WEST BOUND LANE

MSU ST.	DRIVING LANE STEEL PIN	PROF. PT.	CENTER LN.	PASSING LANE PROF. PT.	STEEL PIN
1	7.35	5.75	5.62	5.78	7.34
	7.35	5.72	5.62	5.82	7.34
2	6.88	5.19	5.06	5.23	6.83
	6.88	5.16	5.06	5.25	6.83
3	6.91	5.43	5.28	5.44	7.04
	6.91	5.38	5.28	5.45	7.04
4	8.75	7.16	6.97	7.16	8.69
	8.75	7.09	6.97	7.15	8.69
5	2.70	1.22	1.07	1.22	2.63
	2.70	1.18	1.07	1.24	2.63
6	4.62	3.09	2.93	3.09	4.73
	4.62	3.04	2.93	3.10	4.73
7	6.86	5.27	5.10	5.25	6.78
	6.86	5.24	5.10	5.27	6.78
8	6.10	4.45	4.32	4.49	6.03
	6.10	4.43	4.32	4.51	6.03
9	5.87	4.22	4.03	4.20	5.88
	5.87	4.20	4.03	4.24	5.88
10	6.65	4.68	4.47	4.65	6.23
	6.65	4.60	4.47	4.67	6.23
11	10.36	8.35	8.19	8.33	9.95
	10.36	8.31	8.19	8.34	9.95
12	3.77	1.80	1.65	1.80	3.47
	3.77	1.76	1.65	1.83	3.47
13	GR	8.22	8.11	8.28	9.87
	GR	8.19	8.11	8.29	9.87
14	GR	4.01	3.89	4.05	5.46
	GR	3.95	3.89	4.06	5.46
15	GR	6.51	6.41	6.54	8.15
	GR	6.46	6.41	6.55	8.15
16	2.45	1.18	1.05	1.18	2.84
	2.45	1.13	1.05	1.20	2.84
17	5.42	3.66	3.48	3.58	5.16
	5.42	3.61	3.48	3.58	5.16
18	9.13	7.80	7.64	7.72	9.19
	9.13	7.75	7.64	7.72	9.19
19	8.15	6.41	6.25	6.33	7.41
	8.15	6.36	6.25	6.34	7.41
20	6.23	4.78	4.61	4.78	5.91
	6.23	4.73	4.61	4.78	5.91
21	4.44	2.71	2.61	2.77	4.74
	4.44	2.68	2.61	2.80	4.74
22	6.03	4.68	4.54	4.72	6.71
	6.03	4.62	4.54	4.76	6.71
23	GR	3.45	3.35	3.46	4.98
	GR	3.42	3.35	3.53	4.98
24	12.46	10.87	10.79	10.95	12.85
	12.46	10.85	10.79	11.10	12.85
25	5.99	4.56	4.44	4.56	6.05
	5.99	4.53	4.44	4.60	6.05
26	5.61	4.02	3.91	4.08	5.66
	5.61	3.99	3.91	4.09	5.66

NOTE: under PROF. PT., first indicates peg of profilograph, second indicates wheel of profilograph for each station.
GR indicates guardrail.

TABLE 49.2:
FIFTH ANNUAL LEVELING DATA-EAST BOUND LANE

MSU ST.	PASSING LANE STEEL PIN	PROF. PT.	CENTER LN.	DRIVING LANE PROF. PT.	STEEL PIN
27	5.73	3.82	3.69	3.89	5.63
	5.73	3.80	3.69	3.90	5.63
28	6.26	4.38	4.26	4.50	GR
	6.26	4.38	4.26	4.58	GR
29	12.48	10.98	10.84	11.01	GR
	12.48	10.98	10.84	11.05	GR
30	5.37	3.55	3.38	3.57	5.14
	5.37	3.56	3.38	3.62	5.14
31	6.45	4.83	4.74	4.91	6.51
	6.45	4.85	4.74	4.96	6.51
32	4.85	3.07	2.94	3.12	4.37
	4.85	3.07	2.94	3.17	4.37
33	6.48	4.95	4.81	5.02	6.67
	6.48	4.94	4.81	5.05	6.67
34	7.77	6.40	6.28	6.47	8.08
	7.77	6.39	6.28	6.50	8.08
35	8.72	7.74	7.56	7.71	8.85
	8.72	7.68	7.56	7.73	8.85
36	5.33	3.66	3.52	3.66	5.56
	5.33	3.64	3.52	3.70	5.56
37	3.06	1.10	0.09	1.17	3.40
	3.06	1.08	0.10	1.18	3.40
38	8.30	6.32	6.15	6.33	GR
	8.30	6.30	6.15	6.36	GR
39	5.70	3.88	3.65	3.77	GR
	5.70	3.88	3.65	3.79	GR
40	10.10	8.13	7.91	8.10	GR
	10.10	8.11	7.91	8.12	GR
41	3.81	1.75	1.52	1.68	GR
	3.81	1.73	1.52	1.70	GR
42	10.34	8.39	8.19	8.35	GR
	10.34	8.38	8.19	8.38	GR
43	6.54	4.70	4.50	4.70	6.97
	6.54	4.69	4.50	4.73	6.97
44	5.99	4.10	3.89	4.08	5.99
	5.99	4.09	3.89	4.11	5.99
45	6.31	4.63	4.40	4.47	6.25
	6.31	4.62	4.40	4.51	6.25
46	6.84	5.17	4.94	5.11	6.80
	6.84	5.15	4.94	5.14	6.80
47	4.81	3.28	3.05	3.22	5.31
	4.81	3.26	3.05	3.22	5.31
48	2.85	1.33	1.10	1.20	2.55
	2.85	1.31	1.10	1.22	2.55
49	9.08	7.38	7.15	7.35	8.65
	9.08	7.37	7.15	7.37	8.65
50	7.26	5.63	5.40	5.53	7.18
	7.26	5.61	5.40	5.56	7.18
51	7.01	5.30	5.09	5.28	7.03
	7.01	5.28	5.09	5.30	7.03
52	7.39	5.52	5.39	5.64	7.95
	7.39	5.50	5.39	5.70	7.95

NOTE: under PROF. PT., first indicates peg of profilograph, second indicates wheel of profilograph for each station.
GR indicates guardrail.